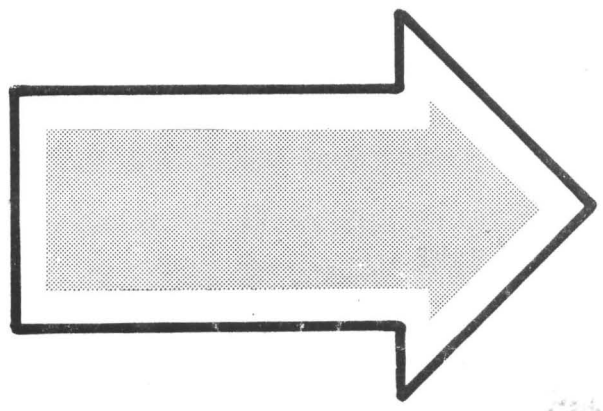
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# INFORMATION BROCHURE

## ALTERNATIVE PROPOSALS FOR FLOOD CONTROL & ALLIED PURPOSES

# GUADALUPE RIVER



## San Jose, California

U.S. ARMY ENGINEER DISTRICT
SAN FRANCISCO
CORPS OF ENGINEERS

IN COOPERATION WITH

Santa Clara Valley Water District

SEPTEMBER 1976

TC425G8I541976c.2

PROPERTY OF SANTA CLARA VALLEY
WATER DISTRICT
5750 Almaden Expressway
San Jose, California 95118

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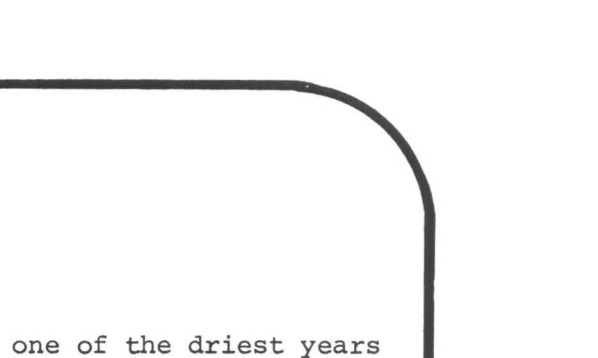
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# PURPOSE OF THIS BROCHURE AND HOW TO USE IT

## WHY THIS BROCHURE?

San Jose has a flooding problem. While it may seem inconceivable in this, one of the driest years on record, the Guadalupe River has the potential of flooding large areas of San Jose. The river has flooded in the past resulting in millions of dollars in damages. Without some sort of flood protection the residents of this area can expect more flood damages in the future. That is why the Corps of Engineers has been authorized by Congress to study the flood problem in this area. That is why we are now asking you to turn your gaze from those sun-parched lawns and try to imagine floodwaters in their place. Then spend some time looking through this brochure and let us know your views on these possible plans for the Guadalupe.

The Corps has been studying the flooding problem on the Guadalupe River and other nearby streams for a number of years. The ultimate goal is to come up with a plan which will minimize flood damage while at the same time preserving or enhancing as much of the valuable natural river environment as possible. This brochure is being provided so that you can see how your interests would be affected by the flood problem and by various proposed "solutions" to this problem.




## INTERESTED ONLY IN YOUR OWN BACKYARD?

Many of you will be interested only in the extent of flooding around your home and what proposals are being looked at for the stretch of the river that runs through your neighborhood. If that is the extent of your interest, we suggest you turn to page 5 and examine the aerial photo of the area discussed in this brochure. Locate your neighborhood and then, using the index on the side of the photo, turn to the pages indicated. These pages will discuss the proposals that are being considered for that section of the river.

## OR INTERESTED IN WHAT BECOMES OF THE WHOLE GUADALUPE RIVER?

Some of you no doubt are more interested in what happens to the river as a whole. You may be concerned about preserving the wildlife habitat along the river channel. You may be interested in proposed recreation plans along the channel. Or perhaps you're interested in the economic effects of various proposals. Whatever the case, this brochure provides a rather unique (and we hope interesting) opportunity for you to design your own plan for the Guadalupe. After the presentation of useful background information (pages 2 through 18), you will find a description of six alternative ways of treating the channel to achieve the desired flood protection. These you might consider as your "building blocks". Following this you will find a two-page discussion on each of the nine river sections or "reaches" that the river has been divided into, and how each "building block" might be implemented in that reach. The information provided will enable you to consider the environmental, social and economic impacts of each alternative channel treatment so that you can choose the alternative that you prefer for each reach. The brochure thus becomes <u>a workbook for you, the planner</u>. After going through all nine reaches choosing a preferred alternative for each, you get to put it all together at the end. In the table on page 38 you can fill in your preference for each reach, thus arriving at a proposed plan for the Guadalupe. Or you can choose the "no project" alternative -- that is, no flood protection project on the river.

## IN EITHER CASE THE CORPS WANTS YOUR INPUT

Whatever your interest -- your own backyard or developing a plan for the river -- the Corps is interested in your opinions and ideas. A postage paid questionnaire has been included at the back of

this brochure. Please fill out as much or as little as you like and drop it in the mail. Your input will be given full consideration as planning continues. If you want more information or want to be sure that your views are known, come to the public meeting on September 17, at 7:30 p.m. in the Santa Clara County Board of Supervisors' Chambers at 70 West Hedding Street in San Jose.

## DEFINING THE STUDY AREA

Figure 1 on the opposite page is a map of the Guadalupe River drainage area or watershed.* It also shows the downstream portion of Coyote Creek, the second major stream being investigated by the Corps at this time. The subject of this brochure, Guadalupe River from Highway 17 upstream to Curtner Avenue, is indicated on this map. Before looking at this specific part of the river, however, let's step back and look at the overall drainage pattern of this area.

### THE WATERSHEDS

The Guadalupe River has its origins at about the 3800-foot level in the Santa Cruz Mountains. From its origins the river flows generally northwest for about 21 miles where it empties into Alviso Slough at the very southern end of San Francisco Bay. The river and its tributaries drain an area of just over 160 square miles.

Coyote Creek, the second major stream being studied by the Corps, has its origins at about the 3400-foot elevation in the Diablo (or Hamilton) Range on the opposite side of the Valley (off the map to the right). From its origins Coyote Creek follows a rather irregular course for about 24 miles before entering the Valley floor where it then flows generally northwest to San Francisco Bay. It enters the Bay about a mile and a half east of Alviso Slough. The Coyote Creek watershed drains an area of about 420 square miles.

### PART OF A LARGER CORPS STUDY

The information presented in this brochure describes only one part of a larger Corps study of flood problems on the "Guadalupe River and Adjacent Streams". (See the table on page 4 for a brief history of Corps investigations on these streams.) The current study, begun in 1972, was limited to the watersheds of the Guadalupe River and Coyote Creek described above. It excluded those areas where there was no existing or contemplated development in or near the floodplain or no known flood threat or history of flooding. It also excluded areas where local flood protection projects were planned or under construction. The larger study area thus defined included Coyote Creek below Anderson Dam, Fisher Creek, Los Gatos Creek, Alviso Slough and the Guadalupe River.

Studies conducted by an engineering consultant firm in 1974 described 29 alternative solutions to the flooding problems in those areas. Based on economic feasibility studies of the alternatives, the study area was further narrowed to Coyote Creek, the Baylands area around Alviso, and the part of the Guadalupe River described in this brochure. Studies of Coyote Creek and the Baylands area are expected to be completed in late 1976. An information brochure on these areas will be sent out at that time and a public meeting to discuss possible plans for these areas will be scheduled early in 1977.

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*If you come across an unfamiliar technical term or phrase, check the Glossary on page 40.

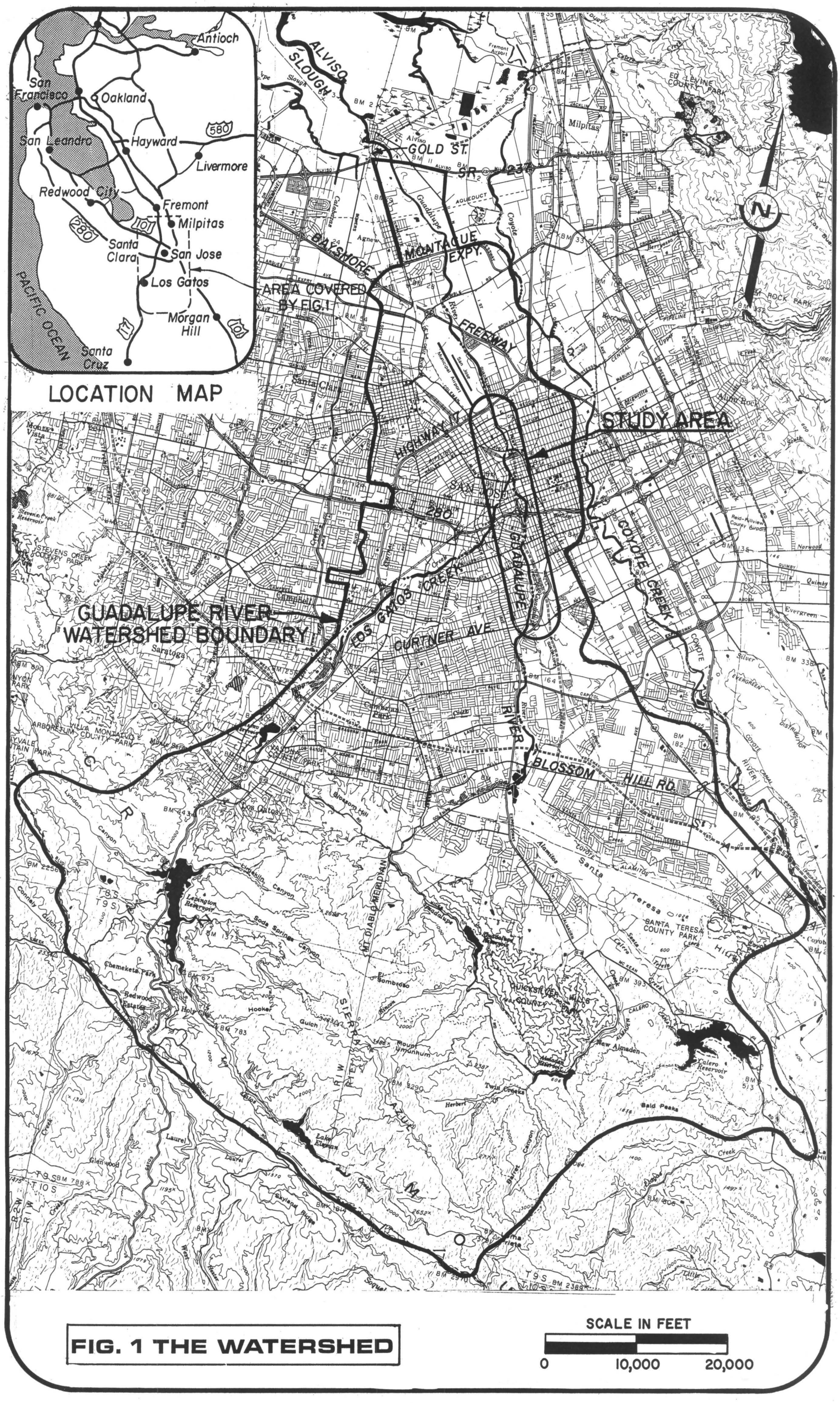



**FIG. 1 THE WATERSHED**

TABLE 1. CHRONOLOGY OF CORPS INVESTIGATIONS ON GUADALUPE RIVER AND ADJACENT STREAMS

| | |
|---|---|
| 1941 | Congress directs Corps to make preliminary examination and survey of Guadalupe River and adjacent streams. |
| 1956 | Following severe storms in 1955 and 1956, local interests request priority be given to studies of flood control for San Francisquito Creek. |
| 1961 | Local opposition to multipurpose reservoir results in no favorable recommendation for project on San Francisquito Creek. |
| 1963 | Studies resume on Guadalupe River and Adjacent Streams. |
| 1968 | Number of possible solutions to flood problem described but none found to be economically justified. |
| 1972 | Studies reactivated due to changing conditions in the watershed. First public meeting held on March 30th. Citizens Advisory Committee (CAC) formed. |
| 1974 | Consulting engineering firm under contract to the Corps identifies 29 alternatives for flooding problems and conducts economic feasibility studies of each. Based on results of these studies, Corps narrows the scope of the investigation to Guadalupe River, Coyote Creek, and the Baylands. CAC provides forum and comments in the screening of alternatives. |
| 1976 | Santa Clara Valley Water District completes preliminary study of alternative channel treatments for the Guadalupe River (the subject of this brochure). Neighborhood meetings with interested citizens as well as CAC meetings influenced study. Public meeting scheduled to discuss these alternatives. |

### THE STUDY AREA DISCUSSED IN THIS BROCHURE

This brochure describes alternative flood protection proposals for only one part of the Guadalupe River, the channel segment from Highway 17 upstream to Curtner Avenue. The study area, indicated in Figure 1, is shown in more detail in the aerial photo on the opposite page (Figure 2). Figure 2 shows how the study area has been divided into nine "reaches" or channel segments for the purpose of formulating alternative plans. As noted above, the index on this figure allows you to locate the pages of this brochure which describe alternative proposals for any given reach. Before looking at this study area in detail, let's explain why this section of the Guadalupe was selected for detailed study, and what's happening upstream of Curtner Avenue and downstream of Highway 17.

### GUADALUPE RIVER UPSTREAM AND DOWNSTREAM OF THE STUDY AREA

The decision to bound this study area at Highway 17 and Curtner Avenue was based on two primary considerations -- the presence of existing or planned local flood protection projects and the ability of the existing channel to carry major flood flows. Upstream of the study boundary, between Curtner Avenue and Blossom Hill Road, the existing channel has sufficient capacity to carry the design flow. The Santa Clara Valley Water District, the local agency responsible for flood protection in this area, has already completed a flood protection project in one short segment of this reach around the Almaden Expressway crossing. Design of a second flood protection project for the reach from Blossom Hill Road upstream to Alamitos Creek has been completed and construction has begun. A number of projects have also been completed or are planned for many of the upstream tributaries.

Downstream of the study boundary, from Highway 17 to the Montague Expressway, the existing channel again has sufficient capacity to carry design flows. However, from Montague downstream to Gold Street in Alviso the river does not have sufficient capacity to carry design flows. A flood protection project for this reach is currently being designed by the Water District. Construction of the reach would be coordinated with the Corps project if one is recommended.

## THE FLOOD PROBLEM

### PAST FLOODS

According to early accounts published in newspapers in the area, large floods occurred in 1862, 1895, 1911 and 1917. While these floods all resulted in major damages, the exact size of these floods

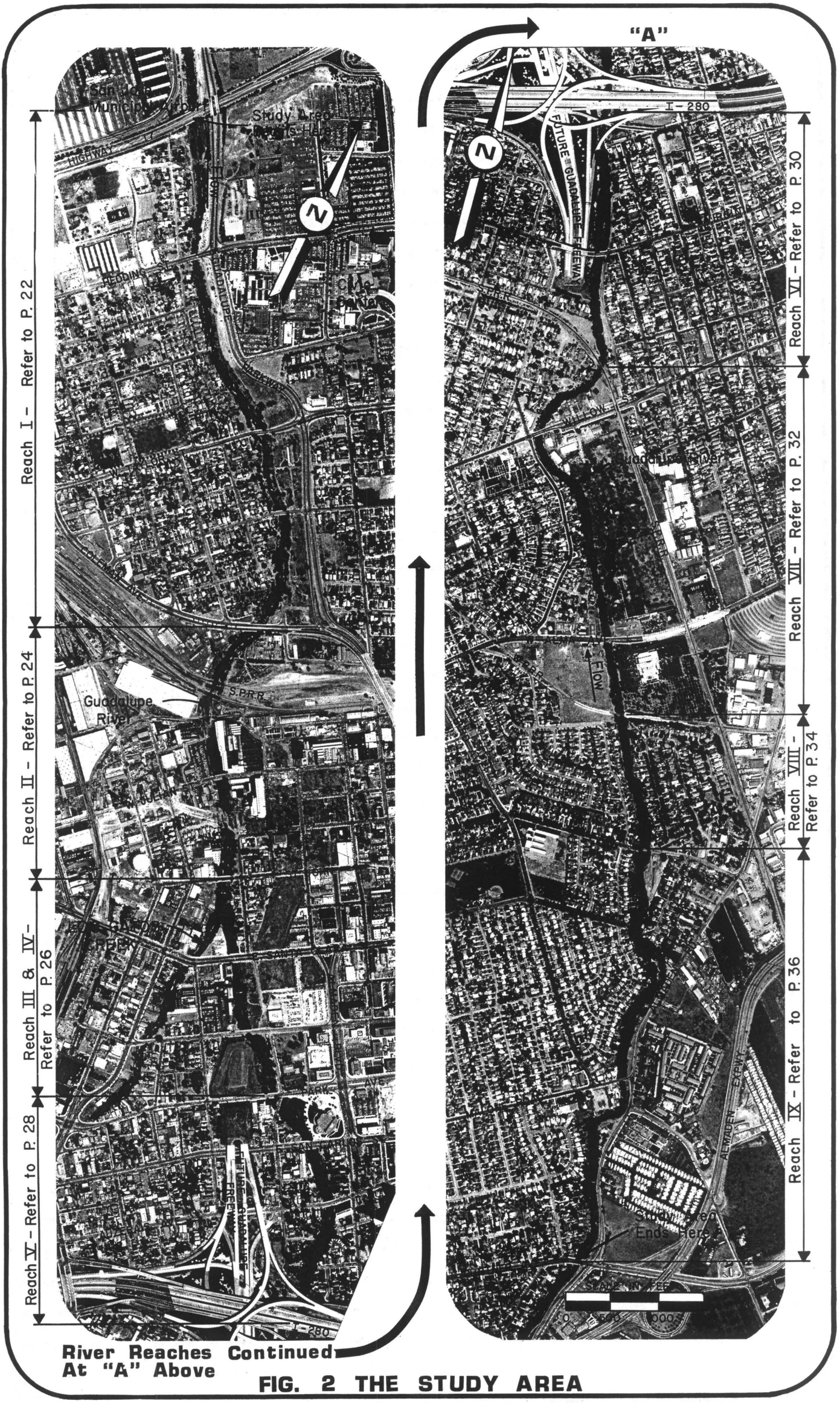



FIG. 2 THE STUDY AREA

is unknown as there was no stream gage on the Guadalupe River until 1930. The largest flood known to have occurred on the Guadalupe since 1930 was in April of 1958. Damages from this flood totalled over three million dollars (based on 1974 prices). About 2700 acres of agricultural land as well as some residential and commercial areas downstream of Highway 17 were flooded. Parts of Alviso remained under water for 17 days. While the major damages were to lands near the Bay, this flood did overtop the river's banks upstream in San Jose as well. Floodwaters up to four feet deep covered one two-block area in downtown San Jose.

A few days before Christmas in 1955 major storms dumped unprecedented amounts of rain in this and other watersheds along the Northern California Coast. The floods resulting from these rains were the largest on record for most Santa Clara County watersheds. Flooding along the Guadalupe, however, while causing some two million dollars worth of damages (again, in 1974 dollars), was much less severe than it could have been. Why was the flooding along the Guadalupe less severe than flooding along neighboring streams? Because of reservoirs on the upstream tributaries -- reservoirs which luckily happened to be almost empty in those few fateful days before Christmas.

## THE UPSTREAM RESERVOIRS

There are seven reservoirs in the Guadalupe River Basin with a combined storage capacity of over 40,000 acre-feet. These reservoirs, while constructed and operated primarily for water supply, do serve to somewhat decrease the magnitude and frequency of flooding. It is important, however, that one not gain a false sense of security from the presence of these reservoirs. The reservoirs are operated for water supply. This means that they are filled to capacity just as soon as possible once the rainy season begins and kept as full as possible. If a major storm occurs after the reservoirs are filled, there is no place to store the flood flows, and the reservoirs must "spill" the water downstream. Thus these reservoirs cannot be counted on for flood protection, though they do serve to decrease flood peaks to some extent by slowing the flows a bit.

## THE 100-YEAR FLOOD

The flood protection plans discussed in this brochure have been designed to protect against the "one percent" or "100-year flood". What do these synonymous terms mean? A flood of this magnitude has, on the average, a one percent chance of being equalled or exceeded in a given year. Thus, chances are that there will be one of these floods in a 100-year period, hence the "100-year flood" terminology. While the latter term is used in this brochure, one should be careful to avoid the misconception that this flood will occur only once in a hundred years. It is possible that a flood this large won't occur even once in the next 200 years. It is also possible, however, that there could be two such 100-year floods next year.

The Corps has computed that the 100-year flood would produce flows of 14,500 cubic feet per second (cfs) in the Guadalupe above Los Gatos Creek and 20,000 cfs below the point where Los Gatos Creek joins the Guadalupe. Those flows would greatly exceed the existing channel capacity and would overtop the banks in many places. The extent of the flooding which would result is shown in Figure 3 on the opposite page. In downtown San Jose floodwaters would reach depths of over four feet in many places.

Note that while the study area discussed in this brochure stops at Highway 17, the flooding continues all the way to Alviso. Also remember that we stated that the downstream channel, from Highway 17 to Montague, had sufficient capacity to carry this flood. Why then does Figure 3 show this area as

The flood prone areas indicated on this map were established for use in economic studies for potential flood control projects for the Guadalupe River. The flood prone areas are generalized in pattern and should not be used to determine depths or extent of flooding for specific locations since topography was limited to USGS quadrangle sheets. No attempt was made to indicate flooding from tributaries and interior drainage. Publication is not recommended without more detailed analysis or without specifying the limitations stated above.

ALVISO

RINCO

RINCON DE LOS ESTEROS

MILPITAS

SUNNYVALE

BAYSHORE FREEWAY

MONTAGUE EXPWY

SANTA CLARA

AGNEWS STATE HOSPITAL

NIMITZ FREEWAY

SAN JOSE

THE SHADED AREA FLOODS DURING THE 100 YEAR FLOOD

GUADALUPE RIVER

FLOW

STUDY AREA BEGINS HERE

HIGHWAY 17

280

LOS GATOS CREEK

THE SHADED AREA FLOODS DURING THE 100 YEAR FLOOD

STUDY AREA ENDS HERE

CURTNER AVE.

SCALE IN FEET

0 4,000 8,000

**FIG. 3 THE 100 YEAR FLOOD**

subject to flooding? The explanation is that the Guadalupe, like most streams in this area, is an "alluvial channel", meaning that over geologic time deposition has raised the channel bank elevation so that it's higher than much of the adjacent land. The result of this is that once floodwaters overtop the bank they don't want to go back because the top of the channel bank is higher than the surrounding land. Thus the area downstream of Highway 17 is flooded by waters which left the channel upstream and cannot return. This is an important point. What it means is that a flood protection project upstream of Highway 17 would provide protection to a large area downstream of 17 as well.

## THE SMALLER BUT MORE FREQUENT FLOODS

While the channel alternatives discussed in this brochure are all designed to provide protection against the 100-year flood, this is not to say that a flood of this magnitude is all we need to be concerned about. The existing channel capacity of the Guadalupe is such that flood flows much smaller than the 100-year event would also overtop the channel in a number of places. Because of the nature of the channel noted above, even these small flood flows may cover a fairly extensive area. The flood damages which can be expected from two of these smaller, more frequent floods -- the 25-year and 50-year floods -- are shown in the table below.

## FLOOD DAMAGES

While the earliest floods of record covered a large amount of land, the damages were relatively minor. This is because this area used to be used primarily for agriculture. Today the area has been extensively developed for residential, industrial and commercial uses. As a result, the potential property damages of even a minor flood in this area are substantial.

The 100-year flood would cover about 2400 developed acres. Approximately 1300 of these acres are residential. The remainder is comprised of approximately 600 acres industrial, 220 acres commercial, and 250 acres public. The total value of structures and their contents within the 100-year flood area was computed to be just under a billion dollars based on 1975 price levels. Damages to these structures and contents are expected to total approximately $84 million for a flood of this magnitude.

TABLE 2. FLOOD DAMAGES

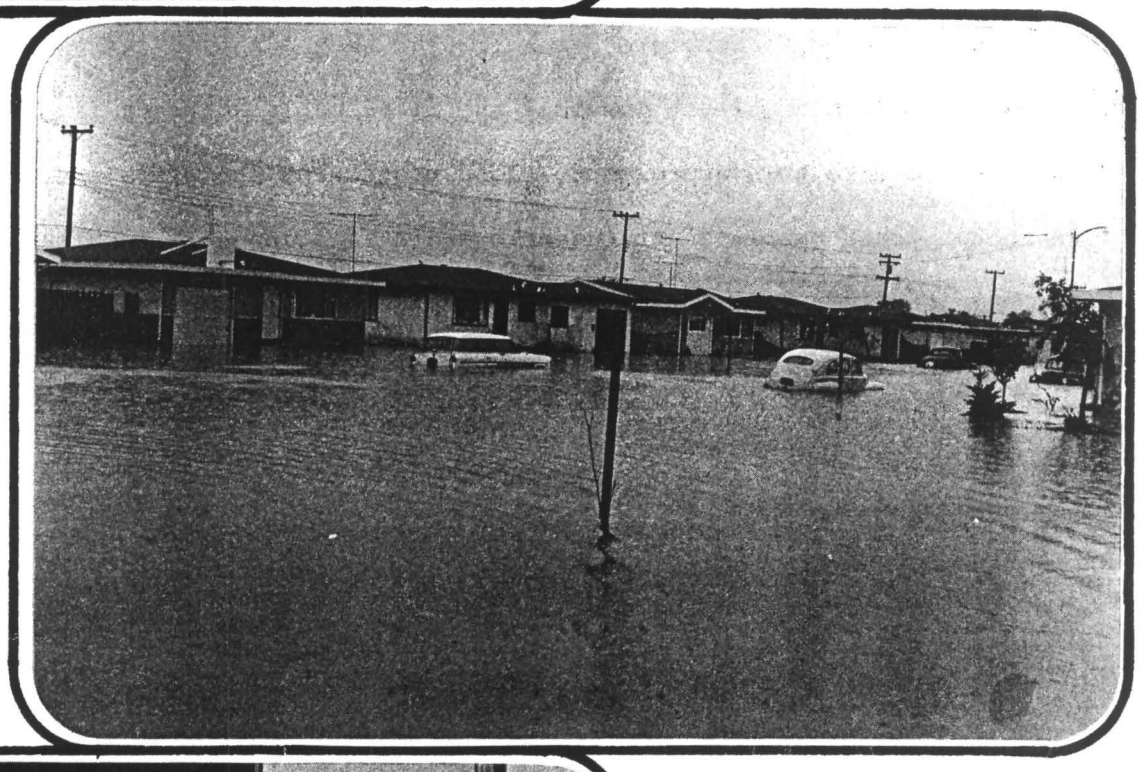
| FLOOD MAGNITUDE | AREAS FLOODED* (acres) | DAMAGES (IN MILLIONS OF DOLLARS) STRUCTURES | CONTENTS | TOTAL |
|---|---|---|---|---|
| Standard Project Flood | 3700 | 69 | 96 | 165 |
| 100-Year Flood | | | | |
| Residential | 1300 | 15 | 4 | 19 |
| Public | 300 | 4 | 11 | 15 |
| Commercial | 200 | 3 | 6 | 9 |
| Industrial | 600 | 11 | 30 | 41 |
| Total | 2400 | 33 | 51 | 84 |
| 50-Year Flood | 1800 | 15 | 31 | 46 |
| 25-Year Flood | 1400 | 9 | 20 | 29 |

*Does not include agricultural and undeveloped areas.

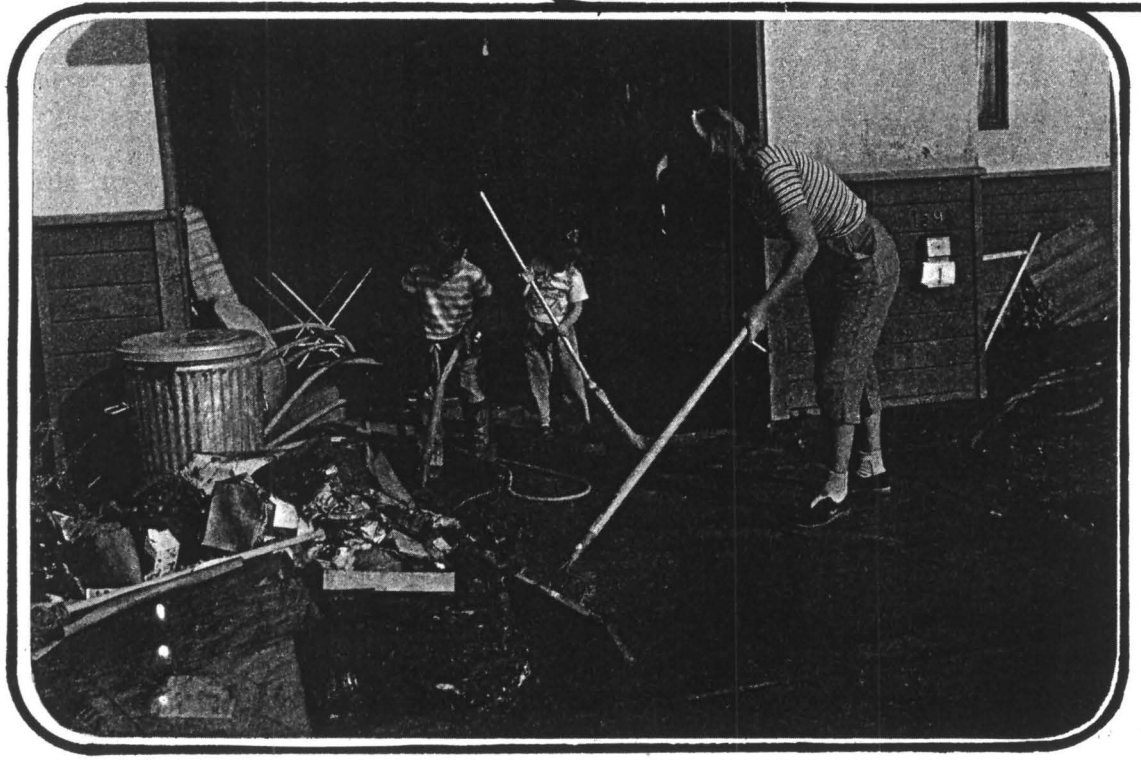
By calculating the damages expected to result from different size floods and combining these with the expected frequency (or probability of occurrence) of each flood, it is possible to estimate average annual flood damages. In this area the average annual flood damages were computed to be just under three million dollars.



Flooding in Alviso from the Guadalupe River in December, 1955. View is looking east toward the foothills, Baylands on the left.



Guadalupe River flooding of residential area east of San Jose Municipal Airport in December, 1955.



Cleaning up after the December, 1955 flood. Home is in same area as photo above.

THE STANDARD PROJECT FLOOD

It is also important to note that floods larger than the 100-year flood can also occur in the watershed. The proposals discussed in this brochure will not provide protection against these larger but less frequent floods. For purposes of evaluating flood benefits, the Corps calculates the damages resulting from "the standard project flood". This is the flood which would be expected to result from the most severe combination of meteorological and hydrological conditions that could be expected to occur in the watershed. The damages expected to result from a flood of this magnitude are shown in the table on the opposite page.

# THE GUADALUPE RIVER CHANNEL: A VALUABLE ENVIRONMENTAL RESOURCE

Not many years ago people's attitudes toward river channels like the Guadalupe which run through urban or suburban areas was quite different than it is today. In many respects people's attitudes toward these channels were not unlike their attitudes toward highways and utility lines -- necessary, but unfortunate intrusions into the landscape. One either hid them behind fences or learned to ignore them. River channels, however, were somewhat different in that they couldn't be ignored. Every now and then, as if to serve notice that they had been there first, they would fill with raging floodwaters and wreak havoc on the works of man constructed along their banks.

In response to this "every now and then" event, property owners along the banks would put up a loud clamor for flood protection. Flood protection meant flood control and, in urban settings like this, flood control usually meant digging a deeper channel, lining the channel with rock, or for the upmost in efficiency, constructing a concrete channel. The best solution was that which conveyed the flood flows safely downstream with the least possible use of valuable adjacent land. Not all people shared this view, but enough did to make this approach to flood protection the prevalent one.

In recent years people's attitudes toward stream channels in urban environments have been changing. More and more, people are coming to appreciate the beauty of a tree-lined stream in an otherwise man-made landscape. The value of channel vegetation as habitat for birds and other wildlife is also being recognized by ever increasing numbers. Finally, as leisure time increases, the potential of river channels as park areas becomes more and more appealing. In short, river channels, such as the Guadalupe, are being recognized as valuable natural resources worth preserving for the enjoyment of all. San Jose is fortunate in that, for the most part, the Guadalupe River has been maintained in its natural state. There are very few American cities which share the good fortune of having a beautiful tree-lined stream running through them.

## FISH AND WILDLIFE HABITAT

The Guadalupe River channel supports a rich and varied ecosystem. Fish swim in the waters of the river and birds and other wildlife find food and homes in the trees and thick vegetation along its banks. This riverbank or "riparian" vegetation provides some of the best, and in some cases, essentially the only habitat for many species of wildlife in this area.

## AESTHETIC APPEAL

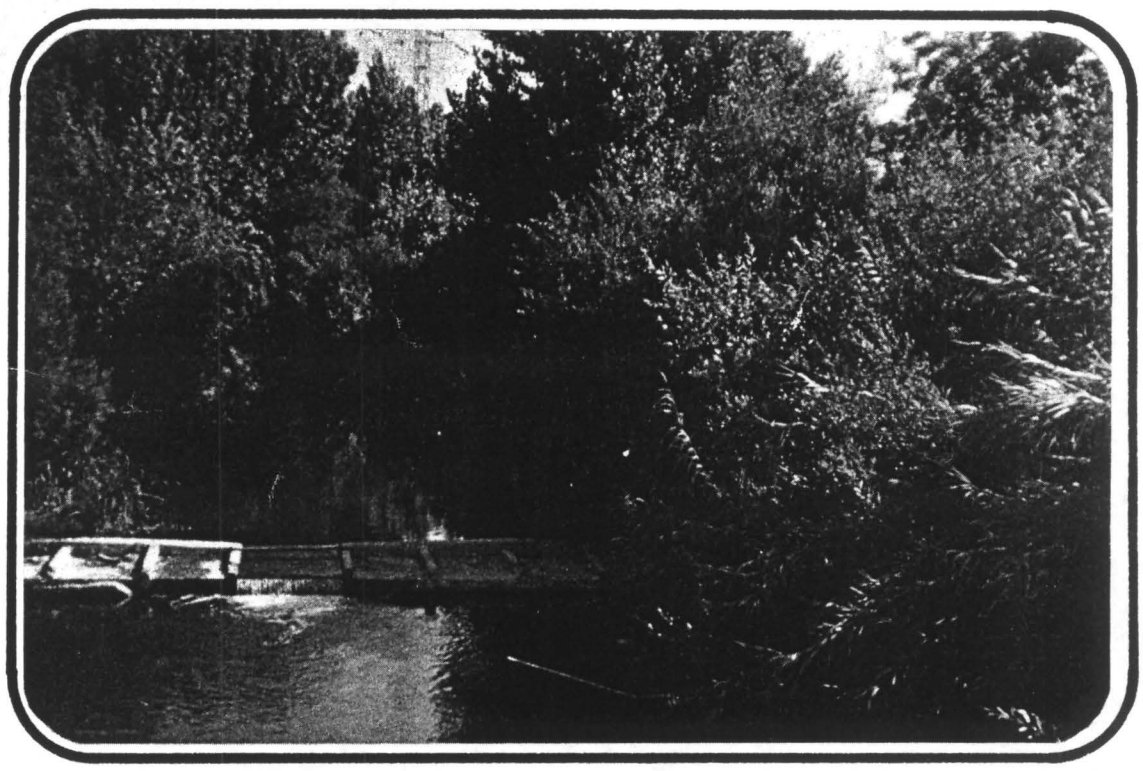
The Guadalupe River is aesthetically appealing. This is, it's pretty -- whether viewed from within the channel itself or from afar. Within the channel one sees a clear flowing stream with a thick canopy of vegetation overhead. The photos on the next two pages show the attractiveness of this dense riparian vegetation from a number of locations along this stretch of the Guadalupe. From nearby freeways and adjacent streets, the tree-lined channel presents a very pleasing view. In most of the study area, this natural stream channel presents the only respite in an otherwise totally man-made environment.

## THE LINEAR PARK CONCEPT

Natural river channels like the Guadalupe present great potential as corridors for footpaths and bikeways, connecting the various parts of the community. This corridor potential, coupled with the beauty of the natural channel, has given rise to the concept of linear parks or park chains within and alongside the channel. This concept has been successfully implemented in a number of urban areas across the



Guadaluper River Channel in Reach I, looking downstream (north) from Coleman Ave. The very dense riparian vegetation provides excellent wildlife habitat along this reach.



Guadalupe River Channel in Reach III, looking upstream (south) from St. John St. Los Gatos Creek enters the Guadalupe from the right in this photo.

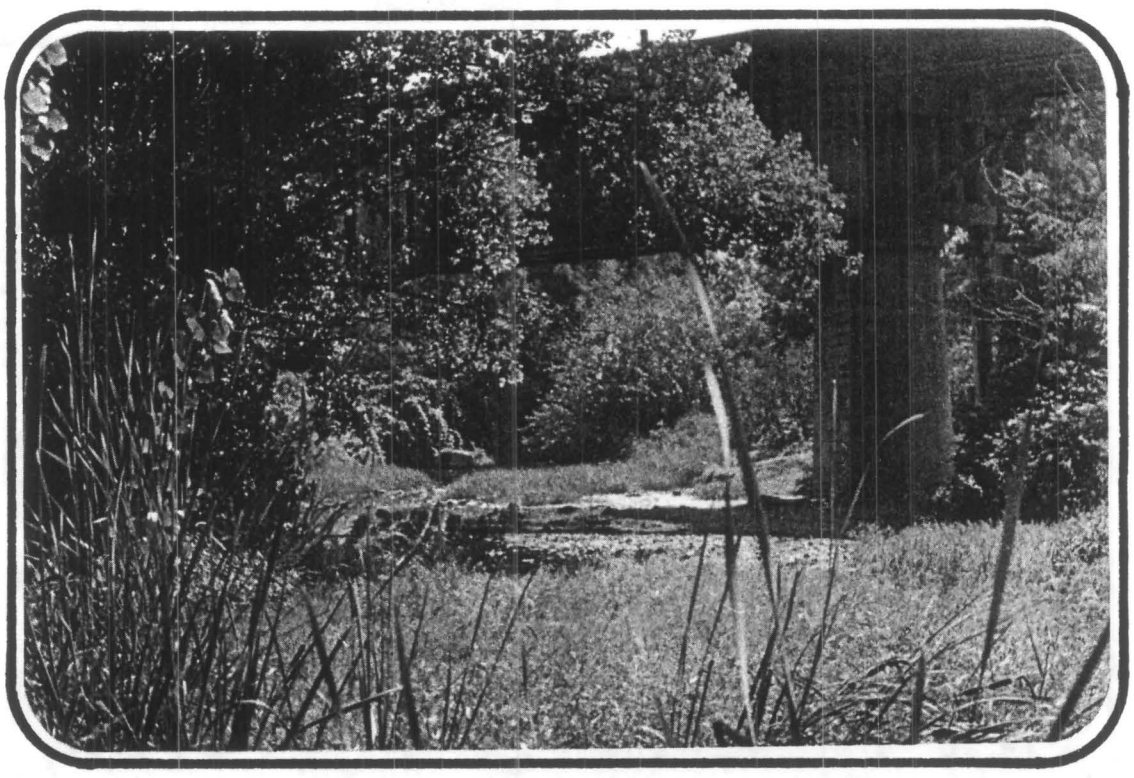


Guadalupe River Channel in Reach V, looking downstream (north) from Auzerais Street.



Guadalupe River Channel in Reach VI, looking downstream (north) from the Southern Pacific Railroad bridge.

Guadalupe River Channel in Reach VI, looking upstream (south) toward Southern Pacific Railroad bridge and Reach VII.





Guadalupe River Channel in Reach VIII, looking upstream (south) from Western Pacific Railroad bridge.

country. The City of San Jose has already completed portions of a linear park along Coyote Creek, the other stream included in the Corps' study. A linear park along the Guadalupe would be part of any proposed Federal project. Tentative plans for this park are discussed in the section on the recreation plan, beginning on page 16.

# INVOLVING THE PUBLIC AND OTHER AGENCIES IN THE PLANNING EFFORT

The Corps is committed to a policy of involving, to the maximum extent possible, all parties interested in its planning studies. In conducting this study of the Guadalupe River, the Corps has provided information to and sought input from environmental and conservation organizations, other citizens groups, other public agencies, and the general public residing in the area. This brochure represents the latest attempt to encourage a two-way exchange of information and views between these groups and the Corps. Some of the efforts at achieving this goal are highlighted below.

## CITIZENS ADVISORY COMMITTEE

A local Citizens Advisory Committee (CAC) was formed shortly after the first public meeting. This Committee, chaired by Mr. Robert Sapp, a member of the Board of Directors of the Santa Clara Valley Water District, has been very active in this planning effort, meeting nearly every month since the start of the study. These meetings have had an average attendance of over 30 people, one indication of the community's interest in the future of the Guadalupe.

The CAC has put in many hours going over the pros and cons of each alternative or "building block" discussed in this brochure. After careful consideration of economic, environmental and social costs, they have come up with a recommendation for each reach of the Guadalupe. These recommendations are included in the discussion of each reach (pages 22 to 37) and are summarized again on page 38.

## PUBLIC MEETINGS

Corps regulations require that at least three public meetings be held during the course of a planning study such as this. For this particular study there will be at least four public meetings. The first was held on March 30, 1972 in San Jose to inform local interests of the resumption of the study and to seek their assistance. The second public meeting, to discuss alternative proposals for the Guadalupe River will be held NEXT MONTH -- SEPTEMBER 17 at 7:30 P.M. The alternatives described in this brochure will be discussed at this meeting. A third public meeting will be held early in 1977 to discuss alternative plans for Coyote Creek and the Baylands. These meetings will be used to decide which alternatives, if any, should receive further study. After more detailed study of these alternatives, a final public meeting will be held. At this meeting the Corps will present the plan it proposes to recommend to Congress.

## ENVIRONMENTAL WORKING PAPER

In January of 1975 a "Working Paper" discussing the environmental evaluation of various alternatives then under consideration was sent out to other public agencies and persons who had expressed an interest in the study. This Working Paper represents the first step in the preparation of the Environmental Impact Statement required by the National Environmental Policy Act. Comments received on this Working Paper were instrumental in formulating the alternative plans in this brochure. For example, reactions to a proposed fully-excavated channel in this area were so adverse that this alternative was eliminated from further consideration.

### NEIGHBORHOOD WORKSHOPS

Three neighborhood workshops were held in the fall of 1975. These workshops dealt specifically with the various alternatives proposed for each of the three major sections of the Guadalupe. The first workshop, held on September 25, discussed proposed plans for the downtown San Jose area (downstream of Interstate 280). The second workshop, held on October 1, dealt with alternative plans proposed for the North Willow Glen area from I-280 upstream to the Western Pacific Railroad. The third workshop took place on October 8 and discussed proposed alternatives for the South Willow Glen area upstream of the Western Pacific Railroad. These workshops were very effective in opening up lines of communication with many of the people most directly affected by the various proposed plans. One result of the workshops was a petition signed by 75 residents of the Willow Glen area supporting a specific alternative proposed for that reach of the Guadalupe.

### COORDINATION WITH OTHER AGENCIES

Useful comments were received from a number of public agencies following circulation of the Environmental Working Paper. In addition, meetings have been held with personnel from the City of San Jose, the State Department of Fish and Game, the State Historic Preservation Office, CALTRANS, the U.S. Fish and Wildlife Service, the U.S. Geological Survey, the San Francisco Bay National Wildlife Refuge, and the Environmental Protection Agency.

## CONSIDERATION OF ALTERNATIVES - THE FIRST LOOK

In 1974 an engineering consulting firm was retained by the Corps to identify possible alternative solutions to the flooding problem in the larger study area (the Guadalupe River and Coyote Creek watersheds and the Baylands). A total of 29 alternatives were identified and evaluated for economic feasibility. Seven of these alternatives were for the Guadalupe River watershed and are described below. Only one alternative, modification of the existing channel, was found to be economically feasible. In 1975 and 1976 a series of different types of channel modification alternatives were formulated and studied by the Santa Clara Valley Water District for the Corps. These alternatives and the "no project" alternative are discussed at greater length in the remainder of this brochure.

### UPSTREAM DAMS AND RESERVOIRS

Four of the alternatives looked at during this initial stage of planning involved new or existing dams on the upstream tributaries of the Guadalupe. New dams on Guadalupe Creek and Los Gatos Creek were examined as was the possibility of raising the existing Lexington Dam to provide flood control storage. These alternatives were not found to be feasible primarily because they do not reduce downstream flood flows to any significant extent. The possibility of altering the operation of Lexington Dam, giving up some water supply storage for flood control storage, was also examined. This was found infeasible as the cost of the water supply that would be given up is greater than the flood control benefits.

### FLOOD PROOFING

The alternative of flood proofing all the residential, commercial and industrial structures in the 100-year floodplain was examined. This entails building walls around houses, providing buildings with watertight shields to be placed over windows and doors during floods, and similar measures. Due to the density of development in the floodplain the costs of this alternative are prohibitive.

### ACQUISITION AND ABANDONMENT OF THE FLOODPLAIN

This alternative entails purchasing all of the residential, commercial and industrial land in the floodplain. This alternative is generally feasible only in sparsely developed areas. The costs involved in an urban area such as this are obviously prohibitive. Even if they were not, it is very unlikely that this proposal would receive wide public acceptance.

## THE "NO PROJECT" ALTERNATIVE

The "no project" or "no action" alternative is always a possible alternative. What it means is no Federal project in this area. It does not necessarily mean that no flood protection projects would be constructed. In the absence of a Corps project it is possible that the Santa Clara Valley Water District would construct some flood protection measures in this area as local funding allowed.

### THE FLOOD PROTECTION ACT

The "no project" alternative assumes that the provisions of the Flood Disaster Protection Act of 1973 (Public Law 93-234) would be fully implemented. San Jose has joined the National Flood Insurance Program provided for by this Act. Individuals and businesses located in flood-prone areas are now able to purchase flood insurance at subsidized rates. If they choose not to purchase flood insurance, they will not be eligible for any type of Federally insured or Federally regulated loans for construction or purchase of property. (If you desire more information on flood insurance, call Carroll Church of the Santa Clara Valley Water District at (408) 265-2600.)

As a condition of the Flood Insurance Program, San Jose is required to adopt adequate land use regulations to avoid additional future flood damages. These regulations require that no development be allowed within certain parts of the 100-year floodplain. In other parts of the 100-year floodplain development is allowed only if the structures are flood proofed. In the Guadalupe River floodplain shown in Figure 3 there are presently about 2100 acres of undeveloped land. Approximately 280 of those acres would not be allowed to be developed. About 1800 acres could be developed with adequate flood proofing. This would generally entail building structures on two to three feet of earth fill in order to raise them above the level of the 100-year flood.

### TANGIBLE AND INTANGIBLE LOSSES

In the absence of any flood protection project, flooding can be expected to occur in the future as it has in the past. Total Guadalupe River flood damages to individuals and business in San Jose are expected to be about $3 million when reduced to an average annual figure. Those who elect to purchase Federally subsidized flood insurance will be covered for most of their losses. Those who choose not to purchase flood insurance must absorb the losses themselves.

There are many losses and hazards associated with flooding which cannot be described in monetary terms. Roads and bridges would be flooded resulting in limited access in many places. Utilities and telephone service would be disrupted in large areas. All of these things would result in at least a temporary inconvenience for many. For a few others in need of emergency services, this loss of communications and access could be more serious. It is these "intangible costs", including the potential loss of life, that are most difficult to weigh in deciding whether or not flood protection is warranted.

# RECREATION PLANS FOR THE GUADALUPE

The recreation plans discussed in this section are very tentative at this time. These recreation plans will receive much closer study in the next phase of the planning process. For that reason the Corps is very interested in receiving any ideas or opinions you might have regarding recreation along the Guadalupe River channel. What types of recreation opportunities would you like to see included? Are there activities which you feel strongly should not be allowed in this area? Please let us know your feelings on this subject. Write your suggestions on the questionnaire at the end of this brochure and mail it to the Corps. Better yet, come to the public meeting on September 17 and let us know what you think.

## GOALS AND OBJECTIVES OF A RECREATION PLAN

The basic goal underlying all proposed plans discussed in this brochure is to provide protection against the 100-year flood while at the same time enhancing the quality of life for both residents adjacent to the river and potential users of this environmental resource as well. The recreation plan addresses this latter goal.

## PROPOSED GUADALUPE TRAIL SYSTEM

The Guadalupe River channel has great potential as a corridor for pedestrian and bicycle traffic through the heart of San Jose and from the foothills down to the Bay. The recreation plan proposed as part of a Corps project will be developed in close coordination with the City Parks Department. In this way, trails and bikeways within the channel area can be made to tie into other existing and proposed trails and bicycle lanes. With proper planning and coordination, the river corridor can be used to link residential areas with the many schools, shops, parks and cultural areas throughout the area.

Figure 4 (opposite page) shows one possible trail and bikeway plan for the Guadalupe. Footpaths and bikeways would meander in and out of the channel through this whole length of the Guadalupe.

"Reliefs". For purposes of access, rest stops and visual relief, small areas termed "reliefs" are proposed all along the river corridor. These reliefs are provided to enhance and complement the trail system while introducing a "natural river" atmosphere into the city rather than confining it to a strict linear corridor. Some of these reliefs would require the purchase of additional land outside the channel right of way required for flood protection purposes. It should be noted that no Federal funding would be provided for this additional land.

Channel Bypass Areas. In some reaches a channel bypass may be the preferred alternative. The recreation plan depicted in Figure 4 shows how trails and bike paths could be constructed in these channel bypasses. In these bypass areas the trails could meander without restriction as these channels would normally be dry.

## PROPOSED PARK OF THE GUADALUPE

In 1968 the City of San Jose, in cooperation with Lawrence Halprin and Associates, developed conceptional plans for a "Park of the Guadalupe". This park would encompass approximately 150 acres between St. John Street on the north and Interstate 280 on the south. (Reaches III, IV and V of the river as shown in Figure 2.) The proposed park would be water-oriented, containing two lakes and several lagoons. Boating and riverside footpaths and sidewalks are seen as major attractions.

As planning continues in the next phase of this flood protection study, the details of this park plan will be more clearly defined. Plans for the Park of the Guadalupe will be integrated into the recreation plan for this section of the river.

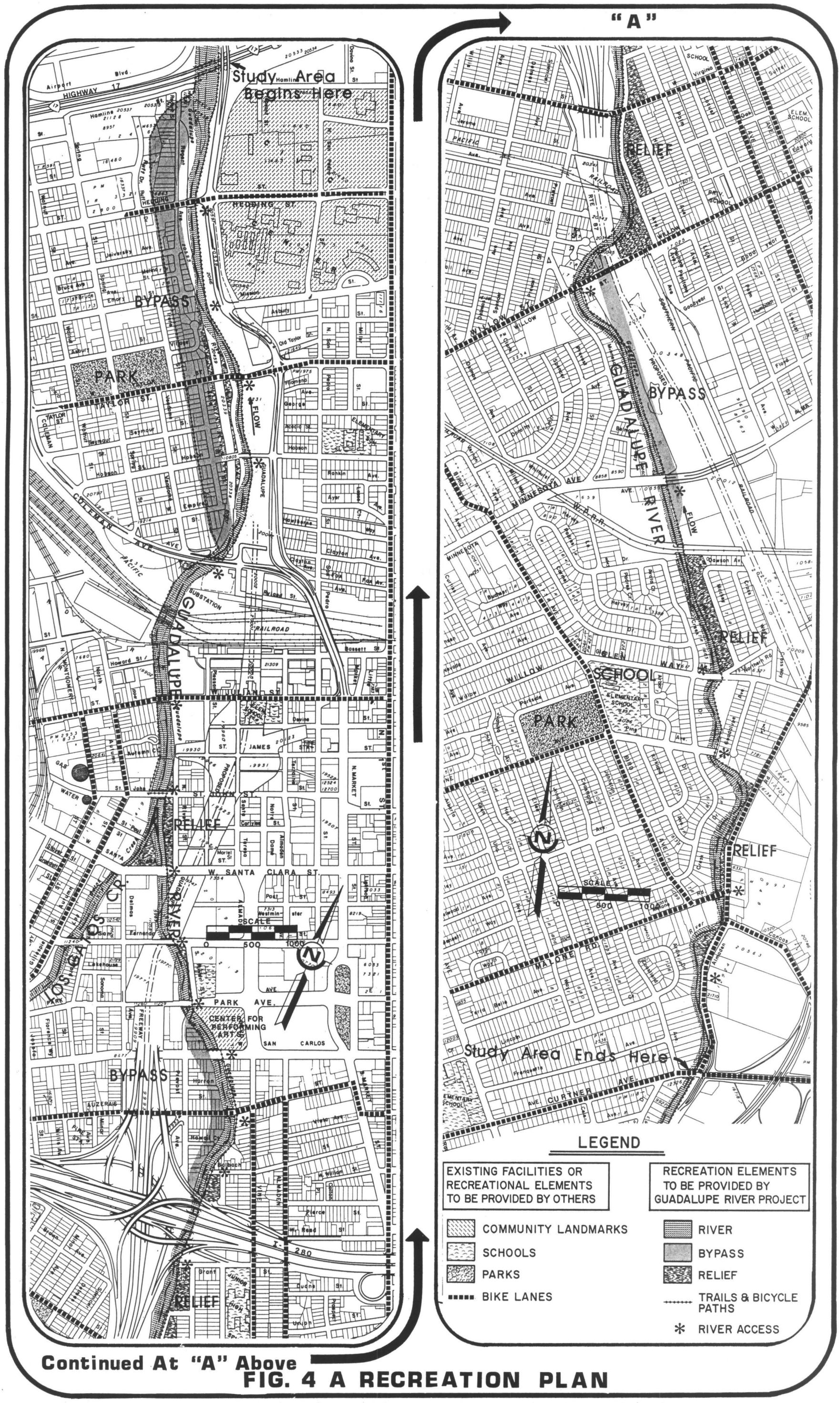



**FIG. 4 A RECREATION PLAN**

# BENEFITS, COSTS AND WHO PAYS

In 1936 Congress authorized the Corps to construct flood control projects "...if the benefits to whomsoever they accrue are in excess of estimated costs". This requirement that benefits exceed costs or, to put it another way, that the ratio of benefits over costs (B/C ratio) is greater than one, is still a prerequisite for Federal participation today. Below we will try to briefly explain how those benefits and costs were computed for this study area.

## FLOOD PROTECTION BENEFITS

The benefits resulting from the implementation of any of the plans discussed in this brochure would consist primarily of present and future flood damages prevented. As discussed previously, the average annual damages resulting from all floods up to and including those as large as the 100-year flood were estimated to be nearly three million dollars. Floods larger than the 100-year flood can still occur, however. After completion of a project to protect against the 100-year flood, these larger but less frequent floods could still result in damages estimated to be about $320,000 on an average annual basis. Thus the benefits of protecting existing developments against the 100-year flood are estimated to be $2,700,000 annually.

Benefits are also derived from the protection of the roughly 2100 acres of undeveloped land mentioned above. This land, presently in agricultural use, lies within the industrial reserve of the City of San Jose and is currently being developed at the rate of 100 to 200 acres per year. Benefits in this area are derived from two sources. First, benefits would result from the 280 acres which could be developed only if a flood protection project were constructed. Second, benefits would result from the savings in fill which would otherwise be required to flood proof structures on the remaining 1800 acres. These two benefits amount to $800,000 annually.

Thus the total annual benefits due to flood protection are $3,500,000. These benefits are applicable to any of the alternatives discussed in this brochure as each alternative plan provides the same level of flood protection. These are the benefits used in the B/C ratios reported below.

## RECREATION BENEFITS

The plans discussed in this Brochure could also result in significant recreation benefits. Recreation benefits are benefits resulting from the increased or enhanced recreational opportunities provided by a proposed project. Because of the tentative nature of the recreation plan discussed, no recreation benefits have been computed at this time. It is possible that they may be added to the total benefits at a later stage in the planning process.

## COSTS AND COST-SHARING

Construction costs are the responsibility of the Federal government. These would include channel excavation, clearing, rock lining, floodwall construction, etc. Local interests are responsible for costs of lands, easements and rights of way (R/W), and all utility, bridge and highway relocations. The costs of any recreation elements which are within the project right of way would be shared 50/50 between Federal and local interests. It should be noted that in computing B/C ratios all costs are included, regardless of whether they are borne by Federal or local interests.

# AN OPPORTUNITY TO PLAN THE FUTURE OF THE GUADALUPE

## THE BUILDING BLOCK CONCEPT

On the next two pages you will find sketches and descriptions of six alternative channel sections. These are the "building blocks" that you can use to design a flood protection plan for the Guadalupe. These six building blocks were selected from a total of eight different channel alternatives designed by the Water District for the Corps. The two sections not shown are a rectangular concrete channel and a rock-lined channel. These two alternatives were eliminated from further consideration because of their serious adverse environmental impacts. All channel alternatives are designed to safely carry the 100-year flood.

## A CHANCE TO TRY YOUR HAND AT PLANNING

On pages 22 to 37 you will find a two-page discussion of each of the nine river reaches and how the various alternatives or building blocks could be implemented in each. In these pages you will find a description of each reach and the existing and proposed land use adjacent to the channel. The discussion also includes a description of the economic, environmental, and social impacts of each alternative channel treatment, considered for that reach.

Your task, if you are interested in designing a plan for the Guadalupe, is to pick the alternative which you think is "best" for each reach. Your job as planner is to consider the "trade offs" among the various economic, social, and environmental impacts and decide on the alternative that you feel will best meet the needs of the community. A space has been provided for you to write in your choice for each reach. After going through all nine reaches you then pull it all together on page 38. By selecting one alternative for each reach you will have arrived at <u>your proposed plan</u> for flood protection on this stretch of the Guadalupe.

You may of course choose to select the "no project" alternative. Note, however, that if you select the "no project" alternative you must select it for all reaches. That is, it is not feasible to provide flood protection in some reaches but not in others.

## PRELIMINARY ESTIMATES ONLY

In reading these reach-by-reach discussions, bear in mind that the plans described are preliminary only. Proposed alternatives will be further refined during the next stage of planning. The impacts of each alternative channel treatment in any reach are not likely to change significantly with more detailed planning. However, the <u>figures</u> given in the table for each reach <u>must be considered approximate only</u>. These figures could change significantly on the basis of more detailed design calculations.

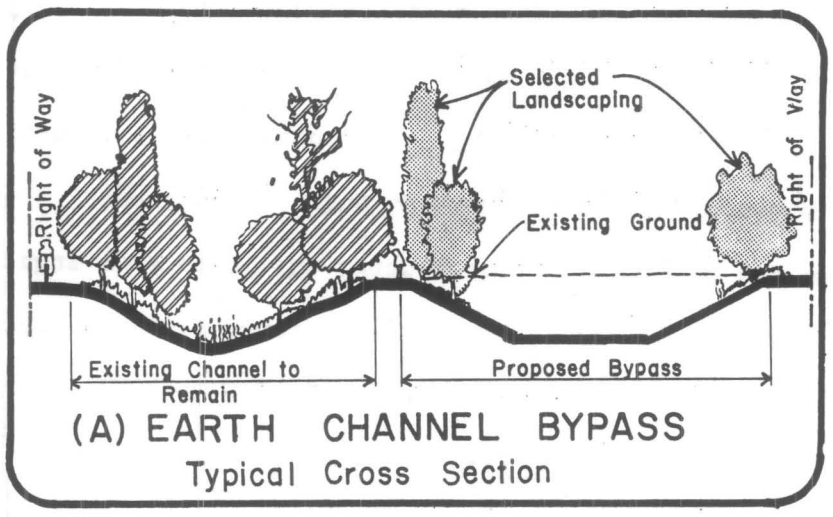
## THE CORPS' RESPONSIBILITY

The Corps is required to formulate, at minimum, three very specific alternative plans. The first of these is the "no project" alternative described earlier in this brochure. The other two, the "NED Plan" and the "EQ Plan" are described below.

<u>The NED Plan</u>: The National Economic Development or NED Plan is the plan which provides the maximum net economic benefits. In this study the benefits for all possible plans are identical. The NED Plan is thus made up of the least costly alternative for each of the nine reaches.

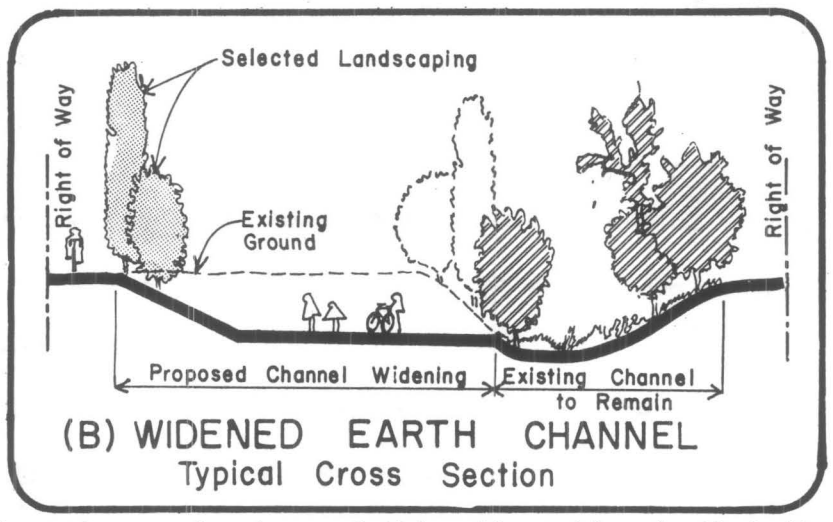
<u>The EQ Plan</u>: The EQ Plan is the Environmental Quality Plan. It is the plan which best protects and enhances the environment. For this planning study the primary environmental consideration is to preserve the natural stream channel with its valuable riparian habitat. However, a second important consideration is the number of houses that would have to be removed for each alternative. Each such relocation represents an important social impact. Each relocation also has an impact on the natural environment as the families displaced would require new housing somewhere else.

# THE BUILDING BLOCKS: SIX ALTERNATIVE CHANNEL SECTIONS



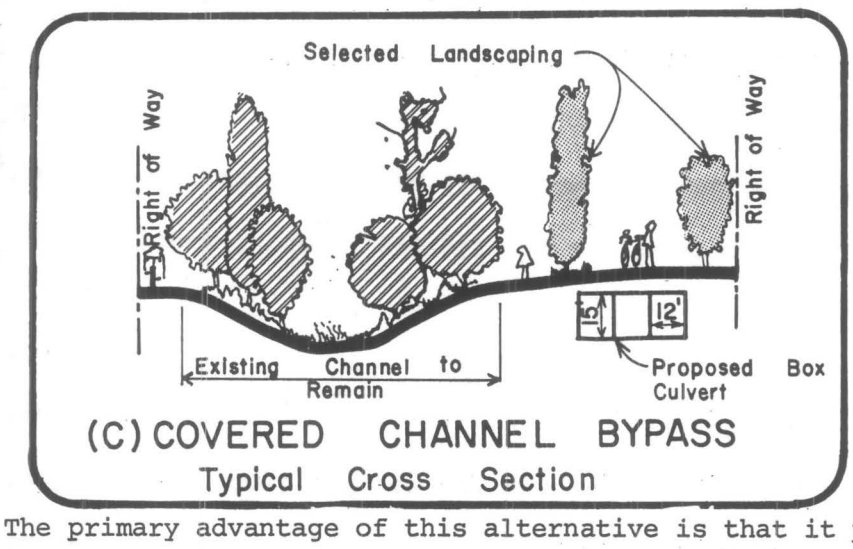
(A) EARTH CHANNEL BYPASS
Typical Cross Section

(A) EARTH CHANNEL BYPASS: This channel alternative is designed to allow the natural channel to carry all flows up to its existing capacity. During flood flows the excess water coming down the channel is diverted into the bypass channel. These floodwaters are then carried downstream to a point where the river channel would be capable of carrying the total flow. The bypass channel is dry at all other times. The primary advantage of this design is that the natural channel remains untouched except at the diversion and reentry points. A second positive environmental effect of this alternative is the creation of additional open space. The bypass would be fully vegetated and could be landscaped as desired to provide public use for trails, bike paths, parks, or similar compatible uses. The primary disadvantate of this alternative is the large right of way (R/W) required outside the natural channel. The acquisition of large R/W's in urban areas such as this typically requires the relocation of many homes and businesses.



(B) WIDENED EARTH CHANNEL
Typical Cross Section

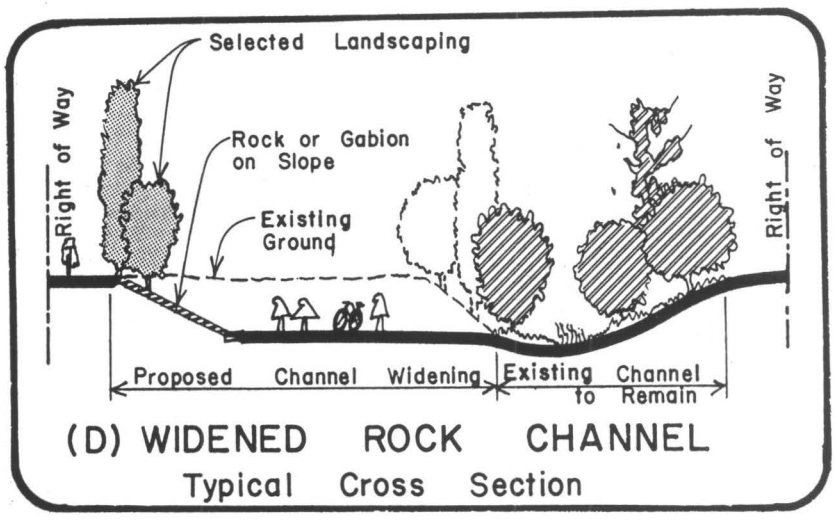
(B) WIDENED EARTH CHANNEL: In this alternative the natural channel is excavated from one side only. The channel is designed sufficiently large to carry flood flows at velocities slow enough to prevent erosion of the channel. Thus no rock or concrete lining is required on either the sides or bottom of the channel. The excavated side would be revegetated with native grasses, shrubs, and trees. The primary advantage of this alternative is that it preserves one bank of the natural channel and the opposite bank would return to a fully vegetated state over a period of years. The primary disadvantage is that this design requires a channel slightly wider than a lined channel and thus requires slightly more R/W.



(C) COVERED CHANNEL BYPASS
Typical Cross Section

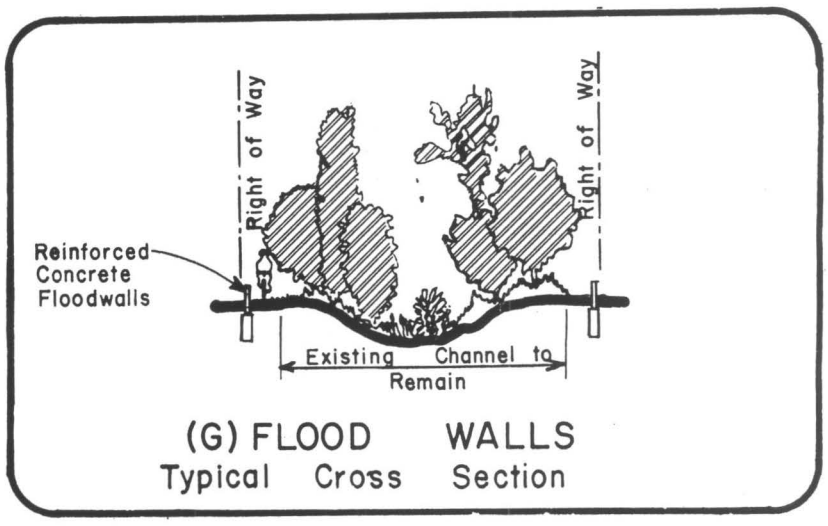
(C) COVERED CHANNEL BYPASS: This alternative is identical in concept to alternative A. The existing channel is preserved and flood flows are diverted to a point further downstream. In this design the bypass is a reinforced concrete box culvert buried beneath the surface of the ground. The land above the bypass can be put to such uses as parks, streets, parking areas, or open space. The primary advantage of this alternative is that it preserves the natural channel. The advantage of this alternative over A, the earth channel bypass, is that it takes less R/W. Moreover, this R/W can be used in a greater variety of ways. The main disadvantage is the higher construction cost involved.

(D) WIDENED ROCK CHANNEL: With this alternative, like B, the natural channel is excavated from one side only thus preserving the natural vegetation on the other bank. This design, however, calls for a slightly narrower channel than the widened earth channel. This results in higher flow velocities which require that the channel bank be lined with rock to prevent erosion. The advantage of this alternative over B, the widened earth channel, is that this design requires slightly less R/W. In some reaches this could result in fewer relocations of homes and businesses. The main disadvantage is that one bank of the existing channel would be destroyed. Moreover, the rock lining on this one bank would certainly detract from the natural appearance of the channel.



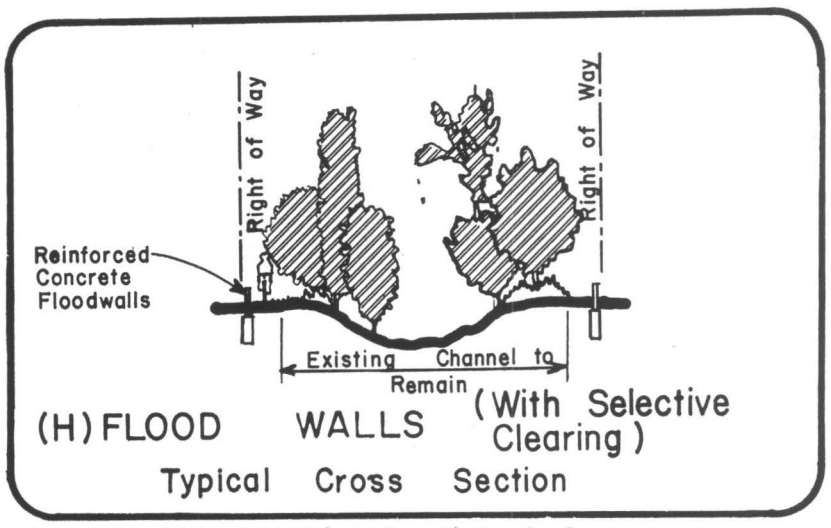
(D) WIDENED ROCK CHANNEL
Typical Cross Section

(G) FLOODWALLS: This alternative consists of reinforced concrete walls, typically about three feet high, set back from the tops of both channel banks. This alternative is practical only in the uppermost reach where flood flows exceed the natural channel capacity by only a small amount. Downstream, the floodwalls would have to be so high as to be unacceptable. The primary advantage of this alternative is that the natural channel is preserved. The primary disadvantage is that these floodwalls may be viewed as an intrusion by some homeowners along the river.



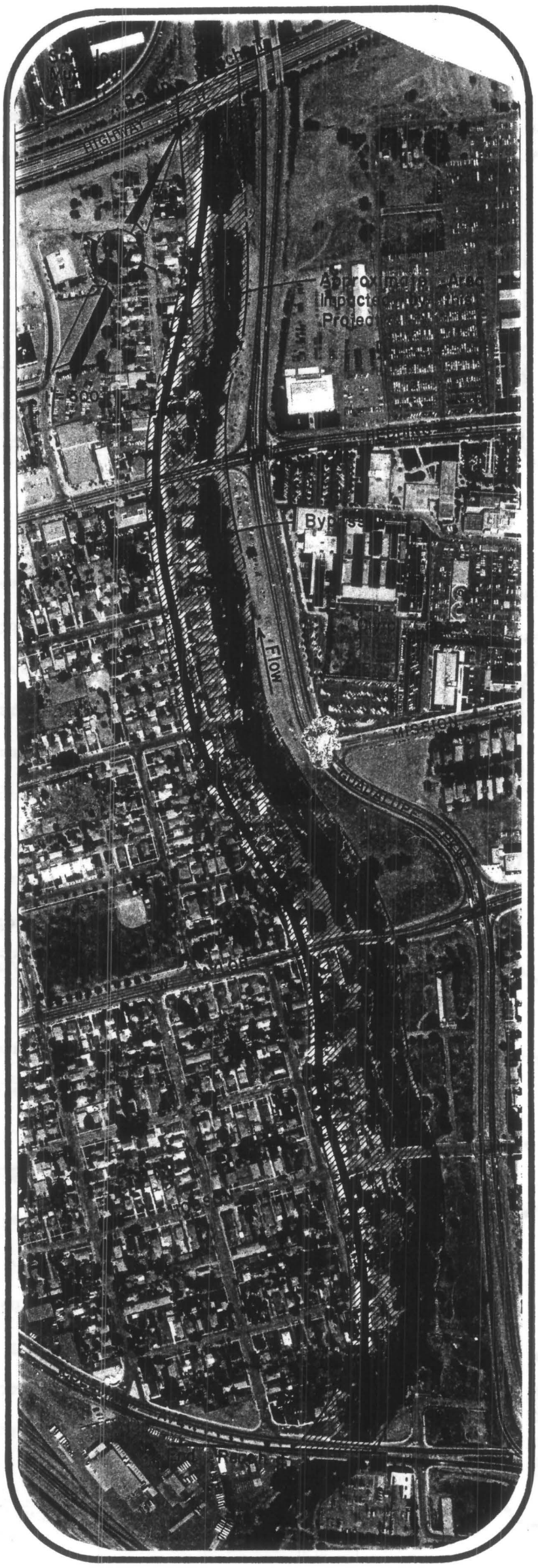
(G) FLOOD WALLS
Typical Cross Section

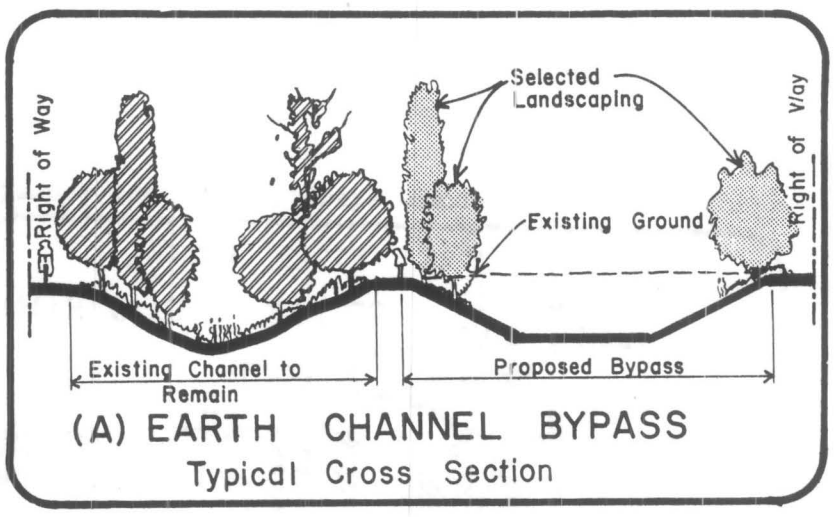
(H) FLOODWALLS WITH SELECTIVE CLEARING: This alternative is essentially the same as G except that brush and some low shrubs are cleared along the channel banks. The effect of this is to slightly increase the flow capacity of the channel by reducing the "resistance" to flow. The main advantage of this alternative over G is that slightly lower floodwalls could be used. The main disadvantage of H over G is that the natural channel would be slightly disturbed.



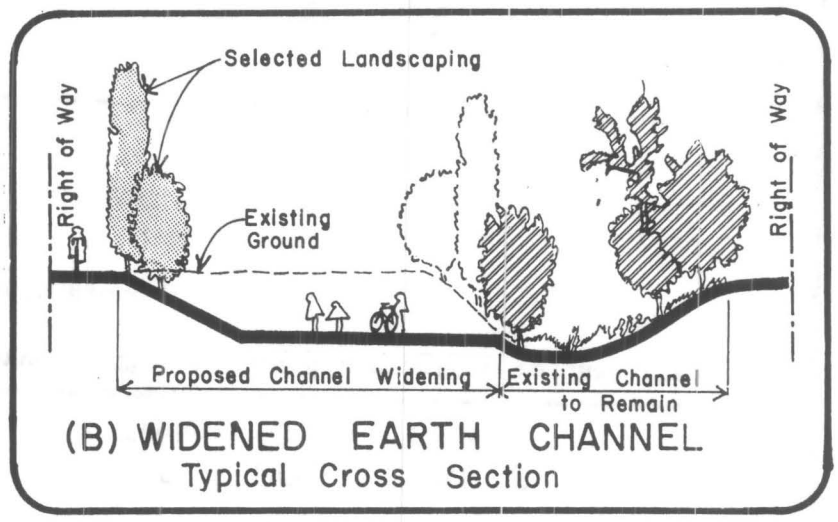
(H) FLOOD WALLS (With Selective Clearing)
Typical Cross Section

# REACH I

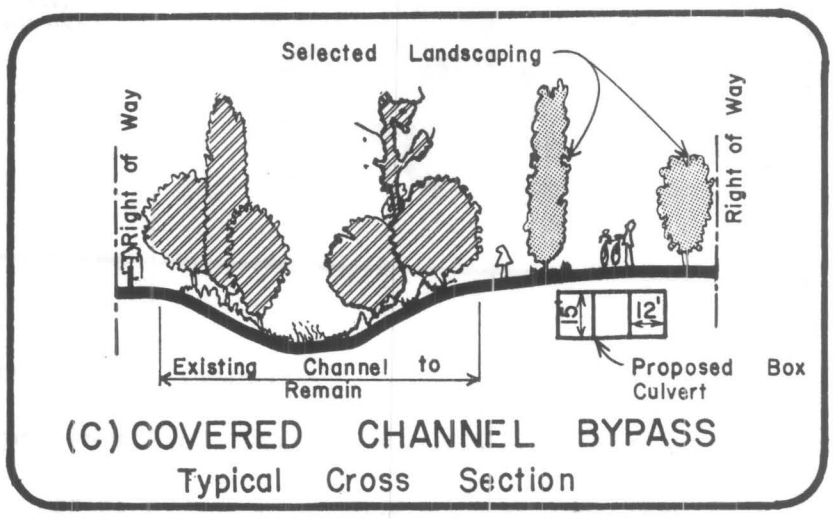


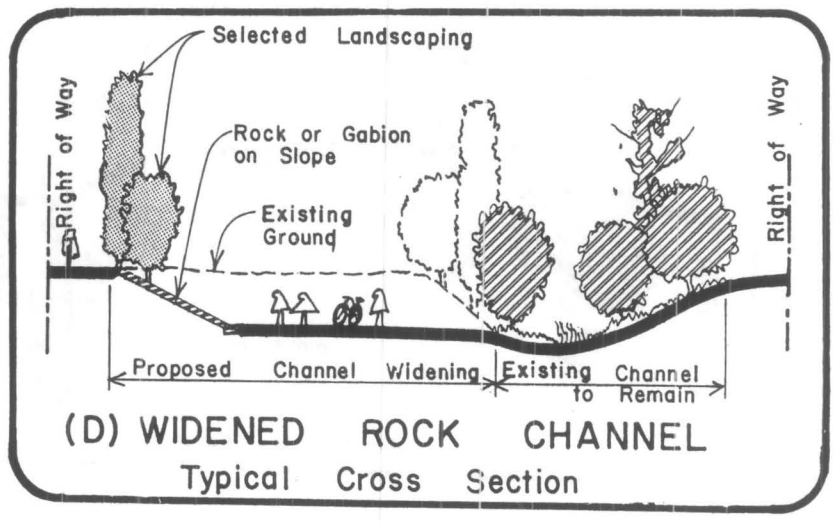

(A) EARTH CHANNEL BYPASS
Typical Cross Section




(B) WIDENED EARTH CHANNEL
Typical Cross Section




(C) COVERED CHANNEL BYPASS
Typical Cross Section




(D) WIDENED ROCK CHANNEL
Typical Cross Section

## DESCRIPTION

This reach, from Highway 17 upstream to Coleman Avenue, is important to the visual appearance of the City of San Jose. It lies beneath the flight path of the municipal airport, is adjacent to the Civic Center, and parallels the Guadalupe Parkway. From an environmental standpoint, this reach has probably the highest wildlife value of any of the nine reaches.

## ADJACENT LAND USE -- PRESENT AND PROPOSED

The Guadalupe Parkway runs along the east bank of the river throughout this reach. Plans drawn up in the early 60's show a six-lane freeway along this route. The land adjacent to the river on the west has been developed as a medium density residential neighborhood. However, this neighborhood lies within the high-level noise zone of the airport and is due to be phased out as a residential area by 1985. All homes will be purchased by the City between now and 1985 and future land use restricted to industrial, recreational, and limited commercial uses.

## ALTERNATIVES CONSIDERED

(A) Earth Channel Bypass: This alternative would leave the vegetation within this valuable section of the river essentially untouched (except where the bypass leaves and reenters the channel). While a bypass channel would require the acquisition of a large number of homes on the west side of the river, this does not represent a major impact inasmuch as these homes are slated for purchase and removal by the City, anyway. An earth channel bypass would be landscaped, thus providing land for recreation and wildlife purposes.

(B) Widened Earth Channel: If this alternative were used in this reach, excavation would be from the west bank, leaving existing vegetation on the east bank intact. However, the loss of vegetation on the west bank must be considered a serious environmental impact in this reach. The right of way (R/W) required for this alternative conflicts with the proposed Guadalupe Freeway.

(C) Covered Channel Bypass: This alternative, like A, would leave the existing channel essentially untouched. A somewhat smaller R/W would be required through the airport noise zone. The covered bypass, essentially a reinforced concrete box culvert, could be overlain with roads, walks, parks, or open space.

(D) Widened Rock Channel: This alternative would have impacts similar to those noted for B. In this case, however, the west bank would be rock-lined, resulting in a less "natural" looking channel. It would require a slightly smaller R/W. Like alternative B, a conflict would exist with the proposed Guadalupe Freeway as presently planned.

### MAJOR IMPACTS OF CHANNEL ALTERNATIVES
### REACH I

| CHANNEL ALTERNATIVE | R/W* WIDTH IN FEET | RELOCATIONS | | CLEARING REQUIRED | | COSTS ($ MILLIONS) | | |
|---|---|---|---|---|---|---|---|---|
| | | HOMES | COMMERCIAL/ INDUSTRIAL | CHANNEL | OTHER | R/W** | CONSTRUCTION | TOTAL |
| (A) Earth Channel Bypass (West Side) | 220 | 81 | None | None | 22 Ac | 6.1 | 6.0 | 12.1 |
| (B) Widened Earth Channel (West Bank) | 140 | 45 | None | 6 Ac | 14 Ac | 3.8 | 3.9 | 7.7 |
| (C) Covered Channel Bypass (West Side) | 100 | 36 | None | None | 11 Ac | 2.7 | 6.1 | 8.8 |
| (D) Widened Rock Channel (West Bank) | 120 | 42 | None | 5 Ac | 12 Ac | 3.4 | 5.1 | 8.5 |
| (G) Floodwalls | Alternative not studied in detail. Technically not practical. | | | | | | | |
| (H) Floodwalls with Selective Clearing | Alternative not studied in detail. Technically not practical | | | | | | | |

* R/W width excludes existing channel width which averages 110 feet.
** R/W costs include estimated lands and relocations cost.

## PREFERRED ALTERNATIVES

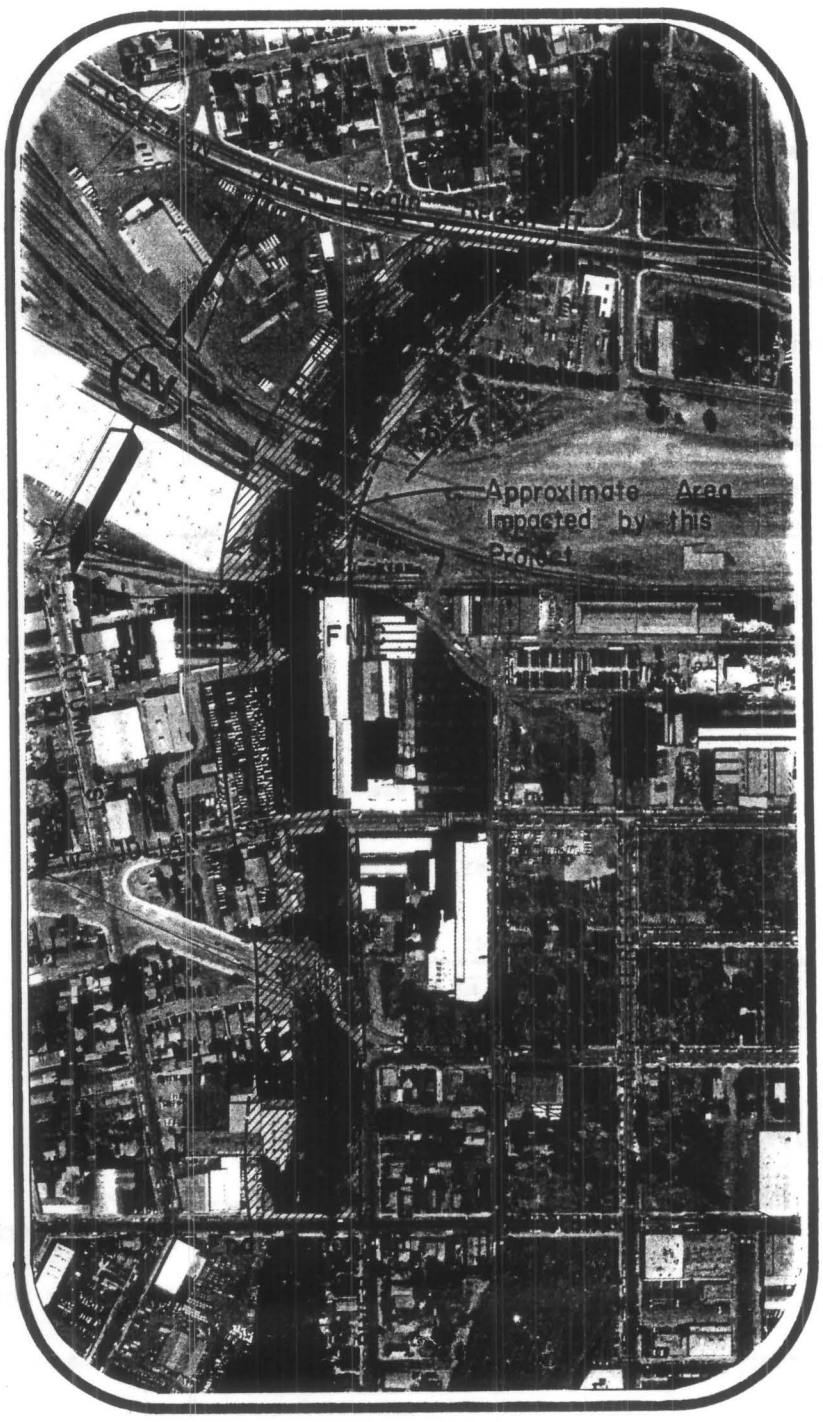
NED Plan: Alternative B, the widened earth channel. (The least costly alternative.)

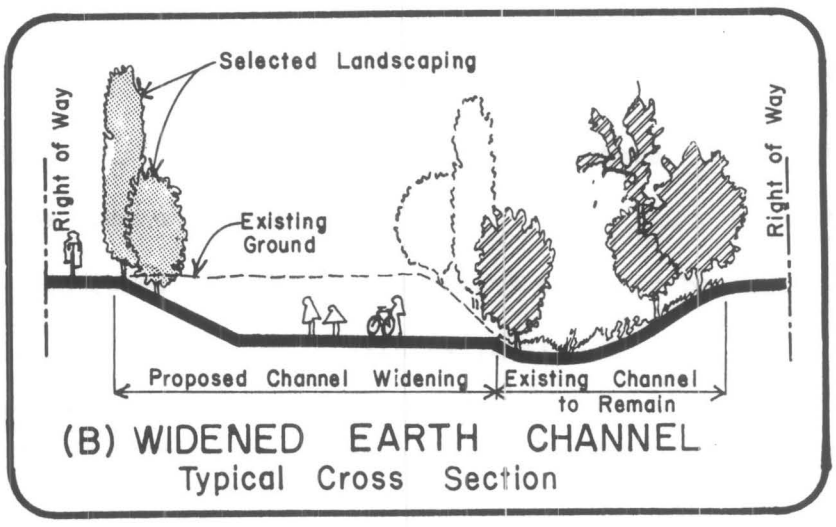
EQ Plan: Alternative A, the earth channel bypass. (It least disturbs the existing channel, provides the most open space, and removes no houses that wouldn't be removed anyway.)

CAC Recommentation: Either alternative B, the widened earth channel, or A, the earth bypass.

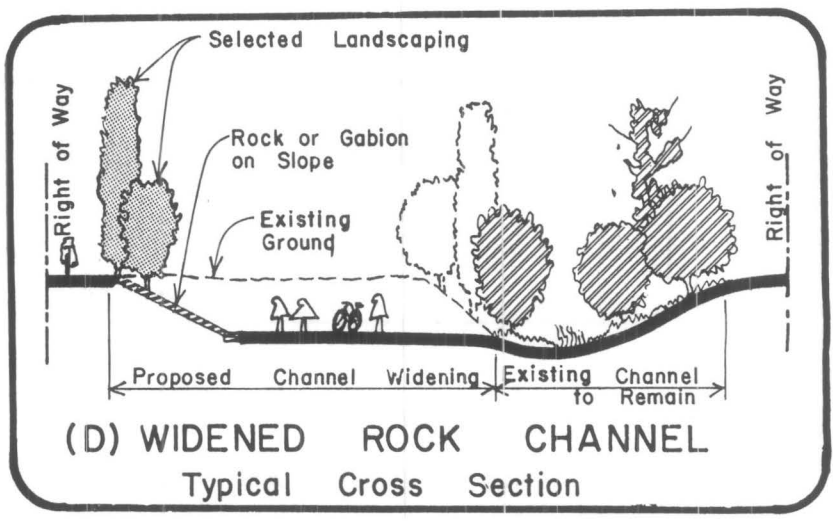
Your Preference: _____

# REACH II




(B) WIDENED EARTH CHANNEL
Typical Cross Section




(D) WIDENED ROCK CHANNEL
Typical Cross Section

## DESCRIPTION

This reach, from Coleman Avenue upstream to St. John Street, runs through the heart of downtown San Jose. The river is crossed by five bridges in this reach. Four are railroad bridges owned by Southern Pacific; the fifth is the West Julian Street bridge. A new Julian Street bridge is currently under construction between West Julian and St. John.

The river channel is quite heavily vegetated in this reach, though disturbances of the riparian vegetation in a number of places attest to man's disregard for the river over the years. The channel contains a large deep pool near the St. John Street bridge.

## ADJACENT LAND USE -- PRESENT AND PROPOSED

The land adjacent to the river in this reach is primarily industrial though there is an older residential area along the upstream end. Immediately upstream of Coleman Avenue on the east is a PG&E substation. Directly across the river are the Southern Pacific Railroad yards. The two other major land owners in this area are the FMC Corporation and California Canners and Growers.

The entire area, extending from the river to Stockton Avenue on the west and the Guadalupe Parkway on the east, is slated for industrial redevelopment by the City of San Jose. The existing residential area will eventually be removed and the area developed for industrial use.

## ALTERNATIVES CONSIDERED

In this reach only the two channel-widening alternatives received serious consideration. The two channel bypass alternatives are not felt to be practical for either side of the river because of existing and proposed land use. Floodwalls alone would have to be so high that their use in this reach is also not practical.

(B) Widened Earth Channel: Channel widening would be from the west bank, in principle leaving the east bank intact. However, because of bridge reconstructions, transition structures, and other problems in this reach, most of the east bank would also be disturbed. All four railroad bridges would require reconstruction. The existing West Julian Street bridge would have to be lengthened. A floodwall would be required on the east bank downstream of this bridge. Upstream of the bridge, both east and west banks would require excavation. The result of all this additional work is that almost all existing vegetation would be removed by implementation of this alternative. This must be considered a serious environmental impact in this reach.

(D) Widened Rock Channel: The implementation of this alternative would be essentially the same as that described above for the earth channel. The bridge modification, floodwall, and additional east bank excavation would still be required. The only difference is that by lining the west bank with rock, about 30 feet of right of way would be saved. However, 30 feet less right of way doesn't gain anything in this area. The same number of relocations would be required. The environmental impacts of this alternative are thus slightly worse than those for B, as the rock lining would appear less "natural" than the earth channel which would revegetate after a number of years.

MAJOR IMPACTS OF CHANNEL ALTERNATIVES
REACH II

| CHANNEL ALTERNATIVE | R/W* WIDTH IN FEET | RELOCATIONS HOMES | RELOCATIONS COMMERCIAL/ INDUSTRIAL | CLEARING REQUIRED CHANNEL | CLEARING REQUIRED OTHER | COSTS ($ MILLIONS) R/W** | COSTS ($ MILLIONS) CONSTRUCTION | COSTS ($ MILLIONS) TOTAL |
|---|---|---|---|---|---|---|---|---|
| (A) Earth Channel Bypass | Alternative not studied in detail. | | | Economically not practical. | | | | |
| (B) Widened Earth Channel (West Bank) | 140 | 6 | 4 | 9 Ac | 6 Ac | 1.9 | 3.8 | 5.7 |
| (C) Covered Channel Bypass | Alternative not studied in detail. | | | May be considered in subsequent planning. | | | | |
| (D) Widened Rock Channel (West Bank) | 110 | 6 | 4 | 9 Ac | 5 Ac | 1.5 | 4.1 | 5.6 |
| (G) Floodwalls | Alternative not studied in detail. | | | Technically not practical. | | | | |
| (H) Floodwalls with Selective Clearing | Alternative not studied in detail. | | | Technically not practical. | | | | |

* R/W width excludes existing channel width which averages 110 feet.
** R/W costs include estimated lands and relocations cost.

## PREFERRED ALTERNATIVES

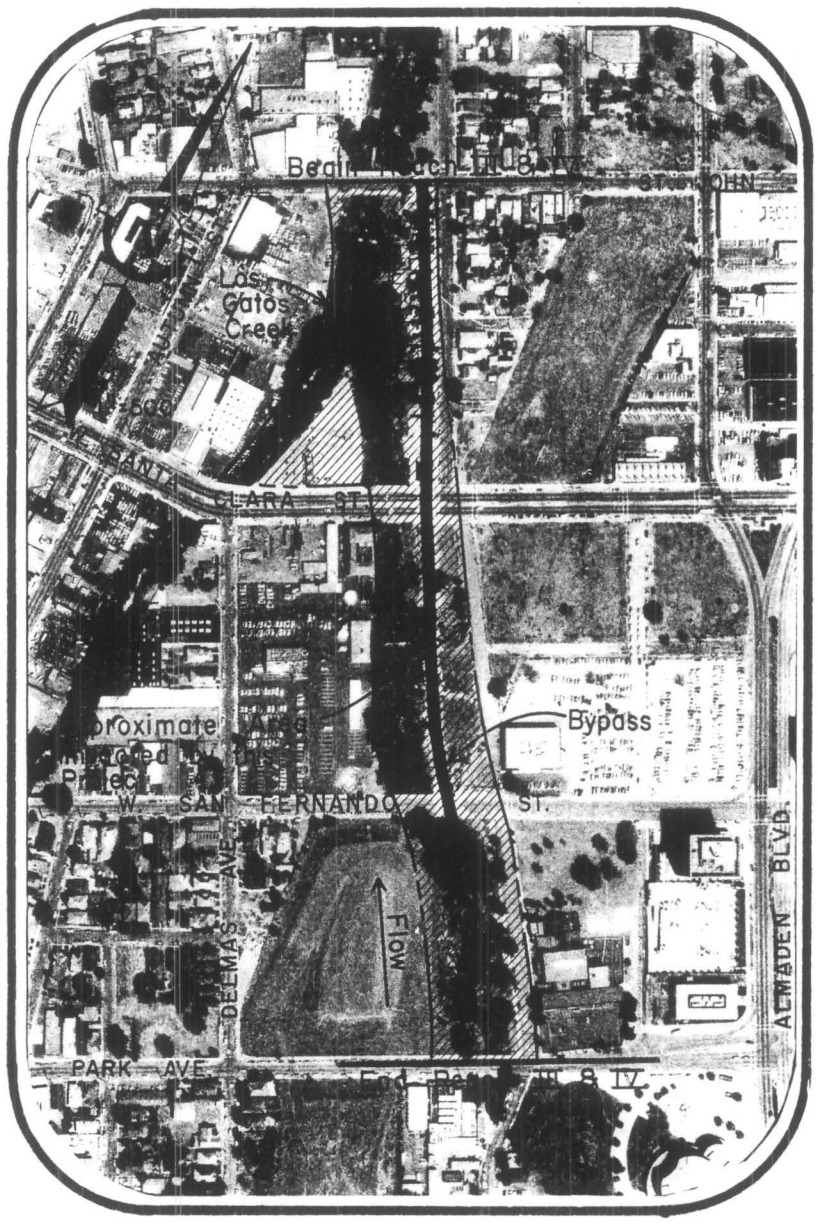
NED Plan: Alternative D, the widened rock channel. (The least costly alternative.)

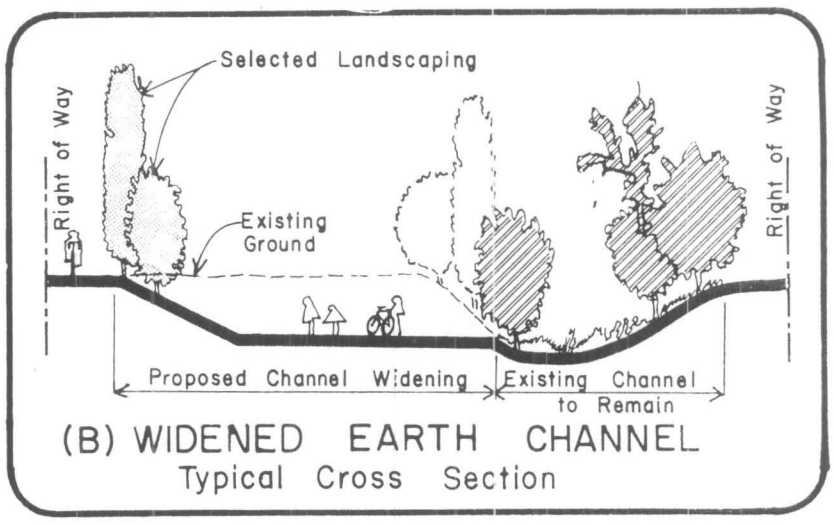
EQ Plan: Alternative B, the widened earth channel. (Both B and D have serious environmental impacts in this reach. B is preferred as it will appear slightly more natural and will provide greater potential for riparian habitat in the future.)

CAC Recommendation: Alternative B, the widened earth channel.

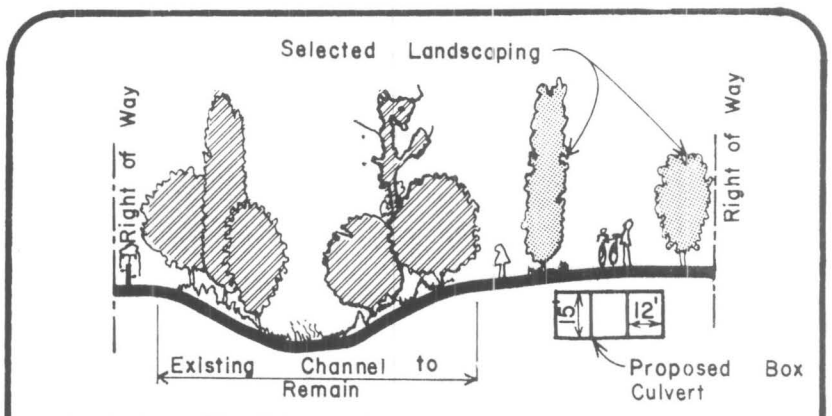
Your Preference: _____

# REACH III & IV

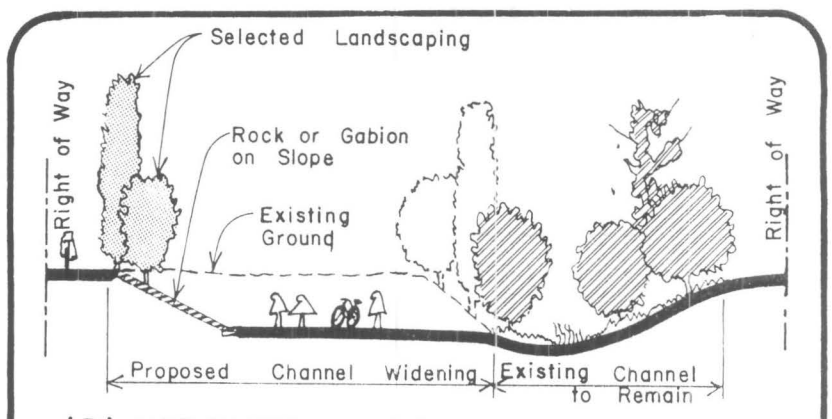



(B) WIDENED EARTH CHANNEL
Typical Cross Section




(C) COVERED CHANNEL BYPASS
Typical Cross Section




(D) WIDENED ROCK CHANNEL
Typical Cross Section

## DESCRIPTION

Because Reach III and Reach IV are both very short, they have been combined and are discussed as one in this section. The combined reach runs from St. John Street upstream to Park Avenue. Two other bridges, carrying Santa Clara and San Fernando Streets, cross the river in this combined reach.

This stretch of the river is quite attractive with many quiet pools and thick riparian vegetation. However, man's impact on the channel is evident at many points along the banks. The most notable feature of this combined reach is the area where Los Gatos Creek empties into the Guadalupe. Just below this reach there is a deep pool where fish over 12 inches in length have been observed.

## ADJACENT LAND USE -- PRESENT AND PROPOSED

The land adjacent to the channel on the east bank from St. John Street to Santa Clara Street is an older residential neighborhood. The San Jose Water Works has its headquarters on the west bank. Most of the remaining land adjacent to the river in this area is presently open space, much of it having been cleared for the proposed Guadalupe Freeway. St. Joseph's School is situated on the east bank along River Street at the upstream end of this combined reach.

Present plans of the San Jose Redevelopment Agency call for development of the Park Center Project along the east bank in this area. The land use plan for this project calls for commercial and public development from Santa Clara Street upstream as far as San Carlos Street (in Reach V).

## ALTERNATIVES CONSIDERED

Three alternative channel treatments were examined in this combined reach. The earth channel bypass is not economically practical in this reach because of adjacent land use. At the upstream end of the reach the school on the east side and the fill area for the Guadalupe Freeway overpass on the west leave too little room for an earth channel bypass. As is the case for all these downstream reaches, a floodwall alone is not practical because of the height required to contain the 100-year flood flows.

(B) Widened Earth Channel: In these two reaches channel widening would be from the east bank, leaving the west bank in its natural state. This widening would require the taking of 16 homes in the area up as far as Los Gatos Creek. Upstream of Los Gatos Creek, the proposed excavation would be adjacent to River Street and would not require the removal of any buildings. Between San Fernando Street and Park Avenue, the plan calls for closing off River Street in order to widen the channel. The main impacts of this alternative are the removal of existing vegetation on the east bank and the removal of 16 homes.

(C) Covered Channel Bypass: A covered channel bypass in this combined reach would be constructed on the east bank adjacent to River Street. The bypass would be designed to fit between the columns of the Guadalupe Freeway overpass. The impacts of this alternative are only slightly different than those of the widened channel alternative. Less riparian vegetation would be removed but the removal of 16 homes would still be necessary.

(D) Widened Rock Channel: In these two short reaches the rock lined channel would not be significantly different than the widened earth channel. Slightly less right of way would be required. (This does not show up in the table below as these figures are for private right of way only. The right of way required along Reach IV is all public property.) The impacts are essentially the same as those for alternative B. However, the rock lining would appear less natural and provide less potential wildlife habitat than an earth channel.

MAJOR IMPACTS OF CHANNEL ALTERNATIVES
REACHES III & IV

| CHANNEL ALTERNATIVE | R/W* WIDTH IN FEET | RELOCATIONS | | CLEARING REQUIRED | | COSTS ($ MILLIONS) | | |
|---|---|---|---|---|---|---|---|---|
| | | HOMES | COMMERCIAL/ INDUSTRIAL | CHANNEL | OTHER | R/W** | CONSTRUCTION | TOTAL |
| (A) Earth Channel Bypass | Alternative not studied in detail. Economically not practical. | | | | | | | |
| (B) Widened Earth Channel (East Bank) | 110 | 16 | 0 | 3 Ac | 3 Ac | 0.2 | 3.5 | 3.7 |
| (C) Covered Channel Bypass (East Side) | 110 | 16 | 0 | 2 Ac | 3 Ac | 0.2 | 4.0 | 4.2 |
| (D) Widened Rock Channel (East Bank) | 110 | 16 | 0 | 3 Ac | 3 Ac | 0.2 | 3.6 | 3.8 |
| (G) Floodwalls | Alternative not studied in detail. Technically not practical. | | | | | | | |
| (H) Floodwalls with Selective Clearing | Alternative not studied in detail. Technically not practical. | | | | | | | |

* R/W width excludes existing channel width which averages 110 feet.
** R/W costs include estimated lands and relocations cost.

## PREFERRED ALTERNATIVES

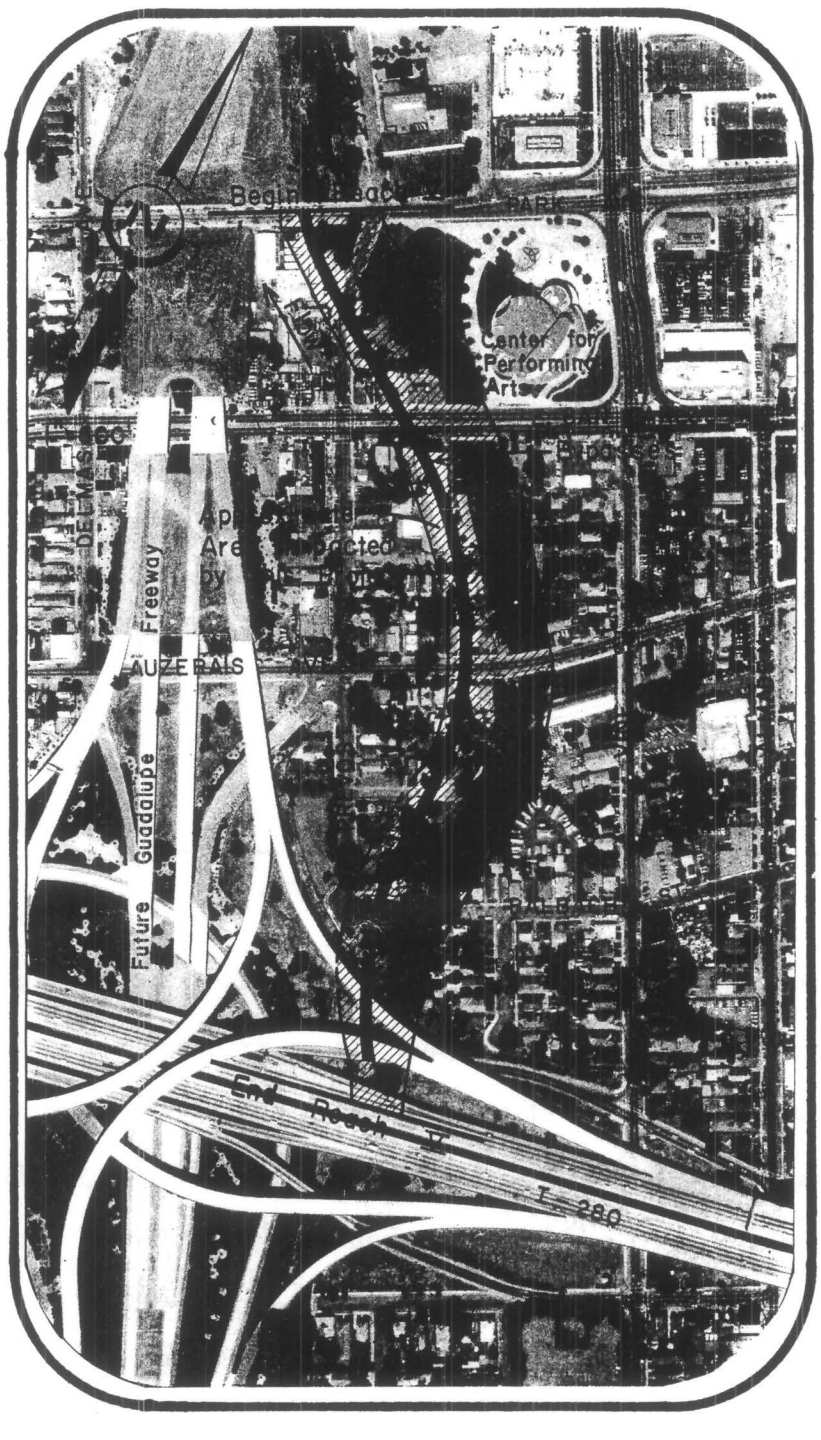
NED Plan: Alternative B, the widened earth channel. (The least costly alternative.)

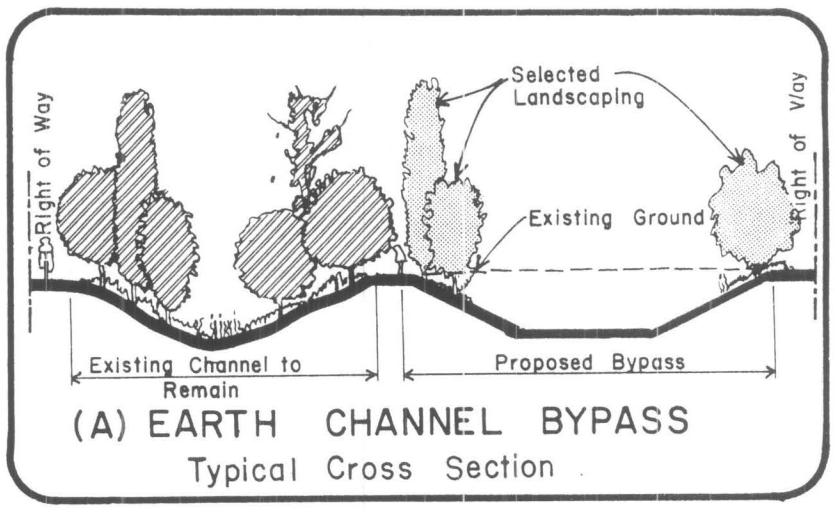
EQ Plan: Alternative C, the covered channel bypass. (While the impacts of all alternatives are similar in these short reaches, the covered bypass destroys slightly less riparian vegetation.)

CAC Recommendation: Alternative B, the widened earth channel.

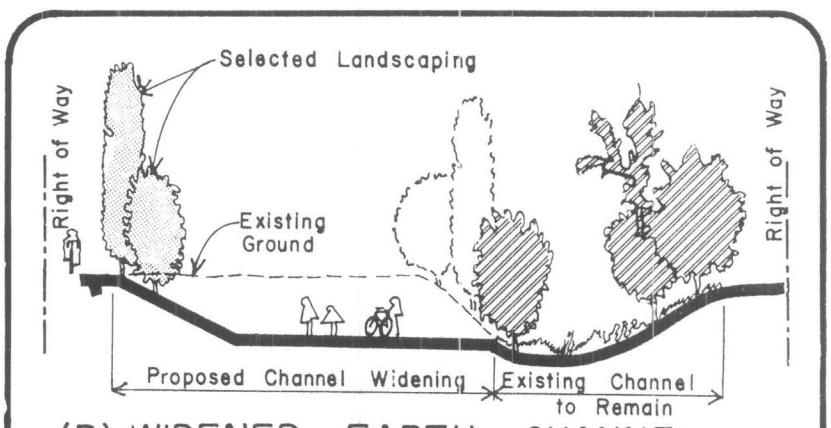
Your Preference: _____

# REACH V

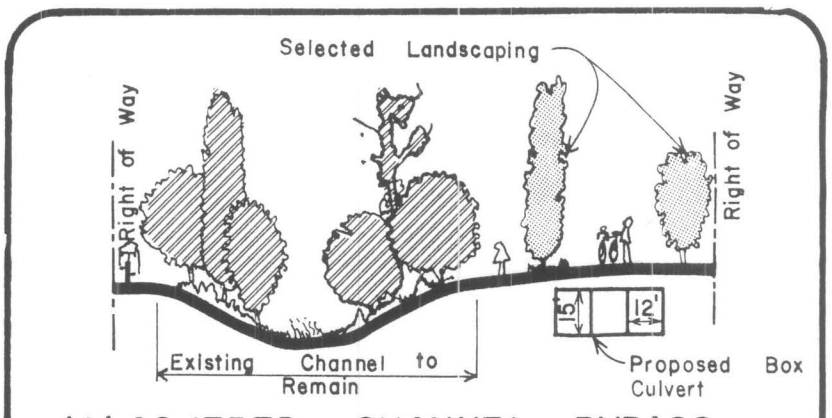


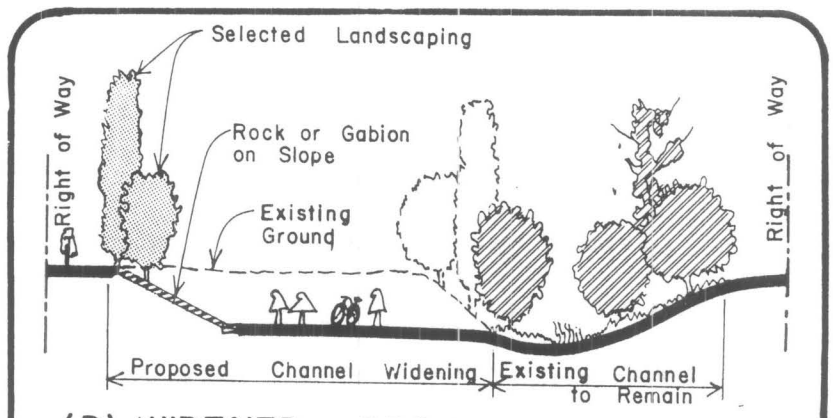

(A) EARTH CHANNEL BYPASS
Typical Cross Section




(B) WIDENED EARTH CHANNEL
Typical Cross Section




(C) COVERED CHANNEL BYPASS
Typical Cross Section




(D) WIDENED ROCK CHANNEL
Typical Cross Section

## DESCRIPTION

This reach, from Park Avenue upstream to Interstate 280, is a good example of the importance of the river to the visual attractiveness of the City. The tree-lined channel presents a pleasing view from the I-280 overpass and will also be visible from the Guadalupe Freeway along the west bank. The landscaping around the Center for the Performing Arts nicely demonstrates how the river can be integrated into the City on a more personal scale.

Dense riparian vegetation provides good habitat for wildlife along most of this reach. However, there is evidence of man's impact on the river in the form of water pollution and dumping along the banks. These impacts could easily be corrected, however.

## ADJACENT LAND USE -- PRESENT AND PROPOSED

The present land use in this area consists of older residential neighborhoods on both sides of the river with scattered commercial and light industrial uses as well. Within the channel itself, the City has developed a riverside trail complete with rest areas.

Dramatic changes are proposed for land use on both sides of the river in this reach. The Plaza de Guadalupe, planned under HUD's Model Cities Program will extend from San Carlos Street upstream to I-280. Plans for this project envision a commercial and recreational development with a Mexican theme. (Plans for the Park of the Guadalupe, also proposed for this reach, are discussed on page 16.)

## ALTERNATIVES CONSIDERED

All four primary channel treatment alternatives received consideration in this reach. Floodwalls are not a practical alternative for any of these downstream reaches due to the height required.

(A) Earth Channel Bypass: This alternative is considered feasible in this reach for the same reason that it was in Reach I: The homes and structures adjacent to the river on the west will be removed anyway to make room for the Plaza de Guadalupe Project. Moreover, the bypass would pass through a part of that project that is being planned for park purposes and could easily be designed to be compatible with this use. However, the required width of this bypass may be larger than the City is willing to accept.

(B) Widened Earth Channel: In this reach channel widening would be from the west bank. This would destroy vegetation on that bank leaving the east bank intact. This alternative would probably not be compatible with plans for the Plaza de Guadalupe.

(C) Covered Channel Bypass: This alternative is most compatible with proposed plans for the Plaza de Guadalupe. The bypass would divert flood flows from the river channel just upstream of I-280 and carry them underneath the Plaza area to a point further downstream. The land above the covered channel could be used for walkways or any other open space use compatible with the proposed park area. This bypass alternative would require less R/W than the earth channel bypass and would also be less costly.

(D) Widened Rock Channel: This alternative channel treatment would require excavation from the west bank. While the east bank would be left intact, rock lining of the west bank would make this alternative even less compatible with proposed park plans than alternative B.

### MAJOR IMPACTS OF CHANNEL ALTERNATIVES

### REACH V

| CHANNEL ALTERNATIVE | R/W* WIDTH IN FEET | RELOCATIONS HOMES | RELOCATIONS COMMERCIAL/ INDUSTRIAL | CLEARING REQUIRED CHANNEL | CLEARING REQUIRED OTHER | COSTS ($ MILLIONS) R/W** | COSTS ($ MILLIONS) CONSTRUCTION | COSTS ($ MILLIONS) TOTAL |
|---|---|---|---|---|---|---|---|---|
| (A) Earth Channel Bypass (West Side) | 250 | 38 | 8 | None | 8 Ac | 3.4 | 5.3 | 8.7 |
| (B) Widened Earth Channel (West Bank) | 160 | 30 | 7 | 2 Ac | 7 Ac | 1.9 | 3.6 | 5.5 |
| (C) Covered Channel Bypass (West Side) | 100 | 23 | 5 | None | 4 Ac | 3.1 | 3.2 | 6.3 |
| (D) Widened Rock Channel (West Bank) | 140 | 26 | 6 | 2 Ac | 6 Ac | 1.9 | 3.8 | 5.7 |
| (G) Floodwalls | Alternative not studied in detail. Technically not practical. | | | | | | | |
| (H) Floodwalls with Selective Clearing | Alternative not studied in detail. Technically not practical. | | | | | | | |

* R/W width excludes existing channel width which averages 110 feet.
** R/W costs include estimated lands and relocations cost.

## PREFERRED ALTERNATIVES

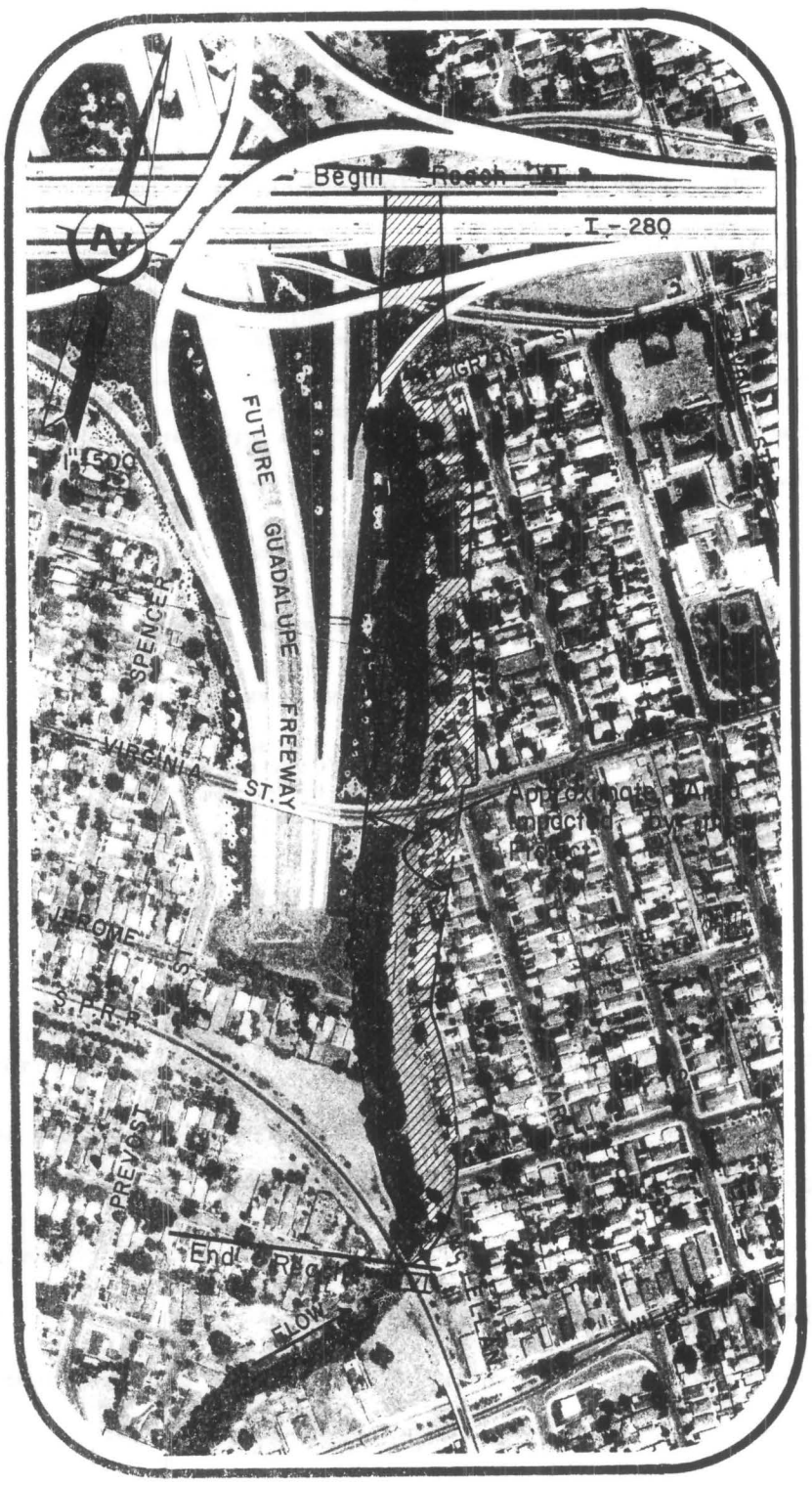
NED Plan: Alternative B, the widened earth channel. (The least costly alternative.)

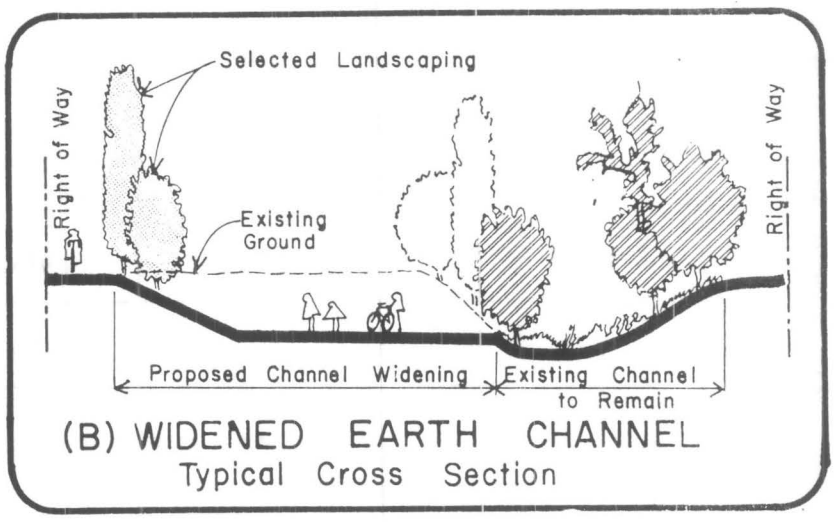
EQ Plan: Alternative C, the covered channel bypass. (It has the least effect on riparian vegetation and is most compatible with proposed park plans for the Plaza de Guadalupe.)

CAC Recommendation: Alternative C, the covered channel bypass.

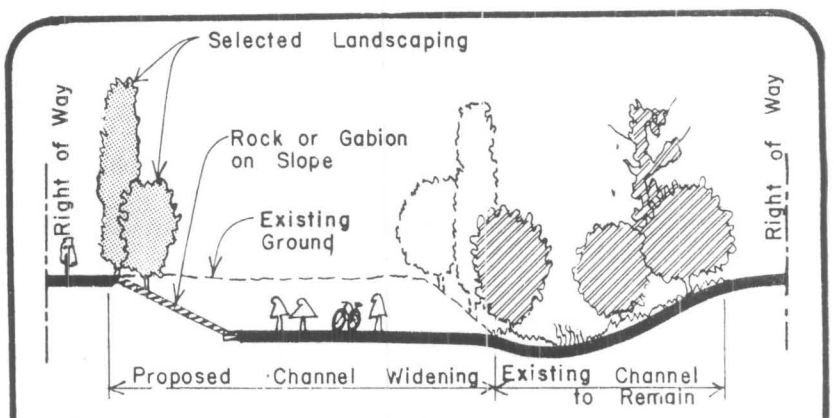
Your Preference: _____

# REACH VI




(B) WIDENED EARTH CHANNEL
Typical Cross Section




(D) WIDENED ROCK CHANNEL
Typical Cross Section

## DESCRIPTION

Reach VI runs from Interstate 280 upstream as far as the Southern Pacific Railroad. Willow Street is just south of the upstream boundary. The river channel is crossed by one bridge in this reach, that carrying West Virginia Street. McClellan Avenue runs along the east bank through most of this reach, while most of the west side is taken up with a completed section of the Guadalupe Freeway.

The channel vegetation in this reach is very dense and provides excellent wildlife habitat. Numerous bamboo and blackberry patches provide both food and cover for birds and other wildlife. The channel is quite accessible along most of this reach and neighborhood children frequently play along the river's bank.

## ADJACENT LAND USE -- PRESENT AND PROPOSED

Land use along this reach of the Guadalupe River is very different on the east and west banks. This difference, clearly shown in the aerial photo above, is due to the Guadalupe Freeway and Interstate 280 interchange. The land on the east bank is occupied by an older, lower income neighborhood. As noted by a person attending one of the workshops, this neighborhood is one of the few remaining areas of low cost housing left in San Jose. A similar neighborhood on the west bank was taken for the freeway and interchange. This is a good example of the social impacts involved where large R/W's are required.

Land use in this area is not expected to change much in the foreseeable future. The Guadalupe Freeway, when extended south, will take the few remaining homes along Jerome Street on the west bank. The Corps is not aware of any changes proposed for the land along the east bank.

## ALTERNATIVES CONSIDERED

Adjacent land use seriously limits the range of alternatives that can be considered for this reach. Because of the Guadalupe Freeway, channel modifications along the west bank are effectively ruled out. Because of the residential neighborhood along the east bank, the two channel bypass alternatives were not considered practical. The economic and social costs of the large R/W's required were felt to be too high. As is the case for all downstream reaches, floodwalls alone are not practical because of the height required to contain the 100-year flood.

(B) Widened Earth Channel: Channel excavation would be from the east, leaving vegetation along the west bank intact. The West Virginia Street bridge would require lengthening. To prevent erosion around the bridge foundation, a small section of channel beneath the bridge would be lined with rock. There are two major impacts of this alternative. First, all vegetation along the east bank would be destroyed. Second, the channel widening would require the removal of 43 homes and the relocation of those families.

(D) Widened Rock Channel: Channel excavation would again be from the east side along McClellan Avenue. Rock lining allows for higher flow rates and thus a narrower channel will carry the same flood flow. This results in a 40-foot smaller R/W. This smaller R/W would save eight homes which would have to be removed with the widened earth channel alternative. In deciding on your preferred alternative for this reach you thus have to choose between a social and an environmental impact. The rock-lined channel saves eight homes but destroys two acres of riparian vegetation. The earth channel will revegetate sometime in the future providing wildlife habitat and a more "natural" looking channel; but it takes eight more homes.

### MAJOR IMPACTS OF CHANNEL ALTERNATIVES

### REACH VI

| CHANNEL ALTERNATIVE | R/W* WIDTH IN FEET | RELOCATIONS | | CLEARING REQUIRED | | COSTS ($ MILLIONS) | | |
|---|---|---|---|---|---|---|---|---|
| | | HOMES | COMMERCIAL/ INDUSTRIAL | CHANNEL | OTHER | R/W** | CONSTRUCTION | TOTAL |
| (A) Earth Channel Bypass | Alternative not studied in detail. | | | Economically not practical. | | | | |
| (B) Widened Earth Channel (East Bank) | 140 | 43 | 0 | 2 Ac | 7 Ac | 2.5 | 1.6 | 4.1 |
| (C) Covered Channel Bypass | Alternative not studied in detail. | | | Economically not practical. | | | | |
| (D) Widened Rock Channel (East Bank) | 100 | 35 | 0 | 2 Ac | 6 Ac | 1.7 | 2.0 | 3.7 |
| (G) Floodwalls | Alternative not studied in detail. | | | Technically not practical. | | | | |
| (H) Floodwalls with Selective Clearing | Alternative not studied in detail. | | | Technically not practical. | | | | |

* R/W width excludes existing channel width which averages 110 feet.
** R/W costs include estimated lands and relocations cost.

## PREFERRED ALTERNATIVES

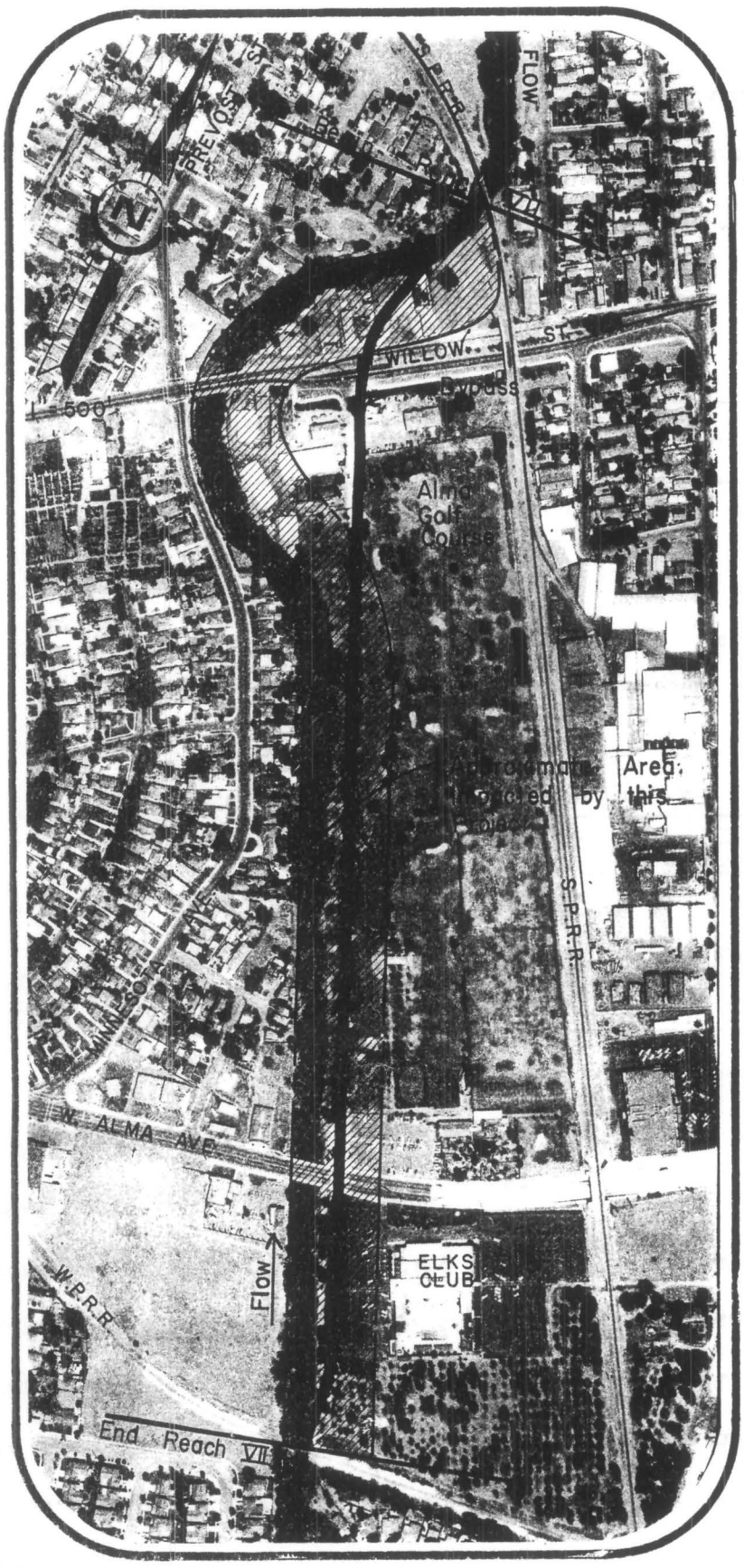
NED Plan: Alternative D, the widened rock channel. (Least costly alternative.)

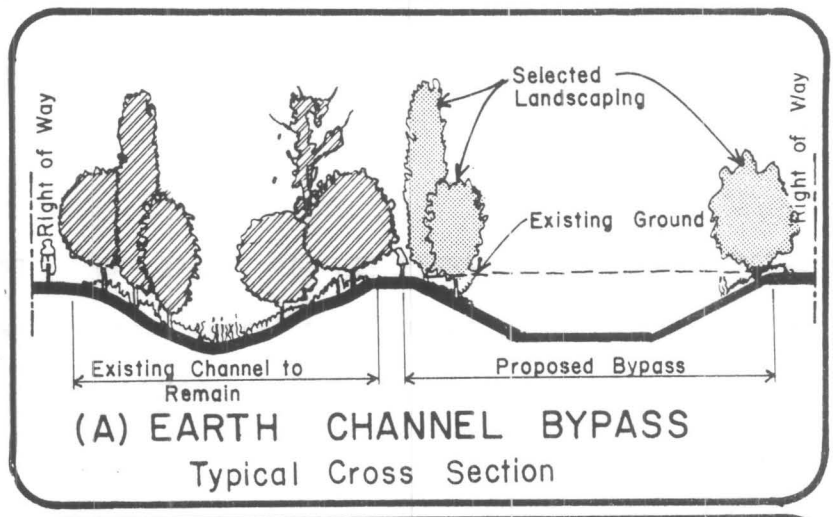
EQ Plan: Alternative B, the widened earth channel. (The impact of this alternative on the natural environment is less severe than rock lining.)

CAC Recommendation: Alternative B, the widened earth channel. (This also appeared to be the choice of the majority of the people at the neighborhood workshops.)

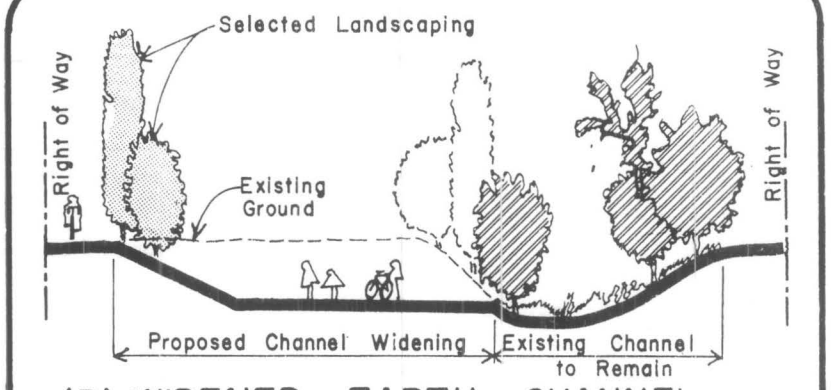
Your Preference: _____

# REACH VII

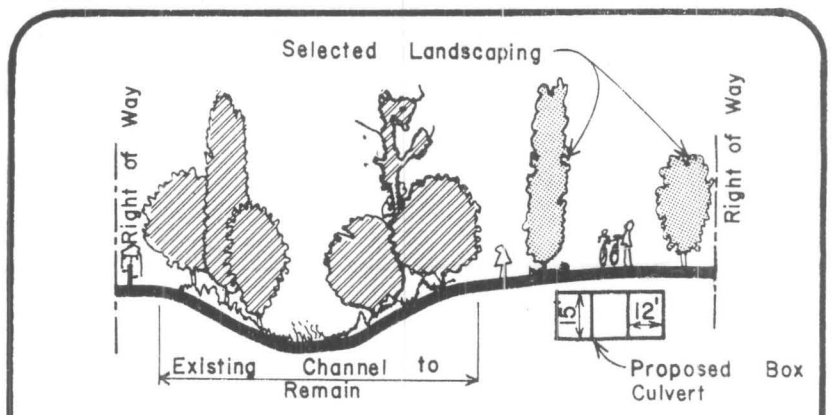


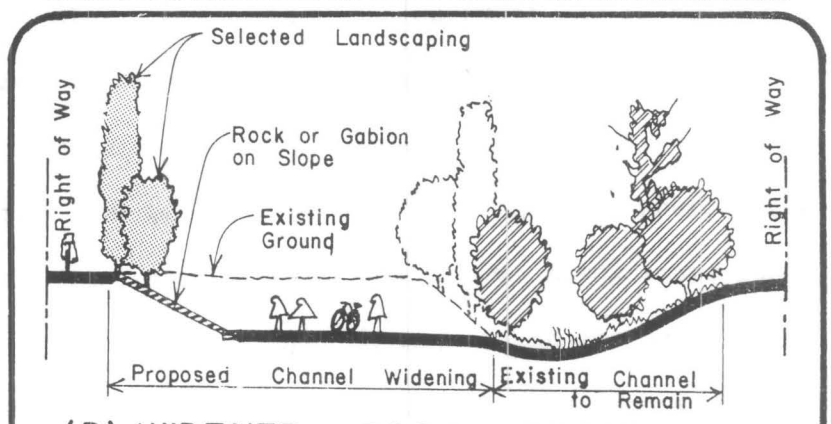

(A) EARTH CHANNEL BYPASS
Typical Cross Section




(B) WIDENED EARTH CHANNEL
Typical Cross Section




(C) COVERED CHANNEL BYPASS
Typical Cross Section




(D) WIDENED ROCK CHANNEL
Typical Cross Section

## DESCRIPTION

Reach VII, in the North Willow Glen area, runs from the Southern Pacific Railroad on the north to the Western Pacific Railroad on the south. The river is crossed by two major streets in this area -- Willow, at the downstream end of the reach, and West Alma, near the upstream end.

This reach has some of the most significant wildlife habitat of any section of the river. Dense vegetation along both banks provides food and cover for many birds and other wildlife. Residents in the area appreciate the natural channel and would like to see it preserved.

## ADJACENT LAND USE -- PRESENT AND PROPOSED

Land in this area is presently used for residential, commercial, and recreational purposes. The land along the west bank is comprised of single family homes as far south as West Alma. Most of the land along the east bank is currently open space, much of it a golf course.

Future land use along this reach will be significantly affected by the proposed Guadalupe Freeway.

The Freeway will cross the river at the north (downstream) end of this reach and continue along the river on the east through the land presently occupied by the golf course.

## ALTERNATIVES CONSIDERED

All four major channel alternatives received serious consideration in this reach. (As usual, floodwalls alone are not practical in this reach.) All alternatives would be implemented on the east bank to avoid the residential area on the west.

(A) Earth Channel Bypass: The R/W required for this alternative conflicts with the proposed Freeway R/W. Because of this, the alternative did not receive serious consideration initially. However, homeowners in the area got involved in the planning process to see if the natural channel could be preserved. One result of this involvement was a petition signed by area residents urging adoption of this bypass alternative. While it is not certain at this time, it is likely that some modifications could be made in the Freeway design to accommodate a bypass channel.

(B) Widened Earth Channel: Channel widening would be from the east bank, leaving the west bank intact. The proposed channel R/W would necessitate some modification in the Freeway design, though less extensive than for the bypass alternative A. The major impact of this alternative is the loss of the riparian vegetation along the east bank.

(C) Covered Channel Bypass: Flows exceeding the capacity of the natural channel would be diverted into a reinforced concrete box culvert at the Western Pacific Railroad bridge and returned to the channel downstream at the Southern Pacific Railroad bridge. This alternative requires the least R/W and fewest relocations. It also leaves the natural channel essentially untouched and is compatible with the proposed Freeway design.

(D) Widened Rock Channel: This alternative requires less R/W than the widened earth channel. However, this smaller R/W does not result in any fewer relocations. Thus, the additional impacts of this alternative on the natural environment are not offset by any decrease in social impacts.

MAJOR IMPACTS OF CHANNEL ALTERNATIVES

REACH VII

| CHANNEL ALTERNATIVE | R/W* WIDTH IN FEET | RELOCATIONS | | CLEARING REQUIRED | | COSTS ($ MILLIONS) | | |
|---|---|---|---|---|---|---|---|---|
| | | HOMES | COMMERCIAL/ INDUSTRIAL | CHANNEL | OTHER | R/W** | CONSTRUCTION | TOTAL |
| (A) Earth Channel Bypass (East Side) | 190 | 2 | 12 | None | 17 Ac | 1.2 | 3.5 | 4.7 |
| (B) Widened Earth Channel (East Bank) | 150 | 0 | 10 | 3 Ac | 10 Ac | 1.0 | 2.9 | 3.9 |
| (C) Covered Channel Bypass (East Side) | 100 | 0 | 5 | None | 7 Ac | 0.7 | 4.8 | 5.5 |
| (D) Widened Rock Channel (East Bank) | 120 | 0 | 10 | 3 Ac | 8 Ac | 0.8 | 3.5 | 4.3 |
| (G) Floodwalls | Alternative not studied in detail. Technically not practical. | | | | | | | |
| (H) Floodwalls with Selective Clearing | Alternative not studied in detail. Technically not practical. | | | | | | | |

* R/W width excludes existing channel width which averages 110 feet.
** R/W costs include estimated lands and relocations cost.

## PREFERRED ALTERNATIVES

NED Plan: Alternative B, the widened earth channel. (The least costly alternative.)

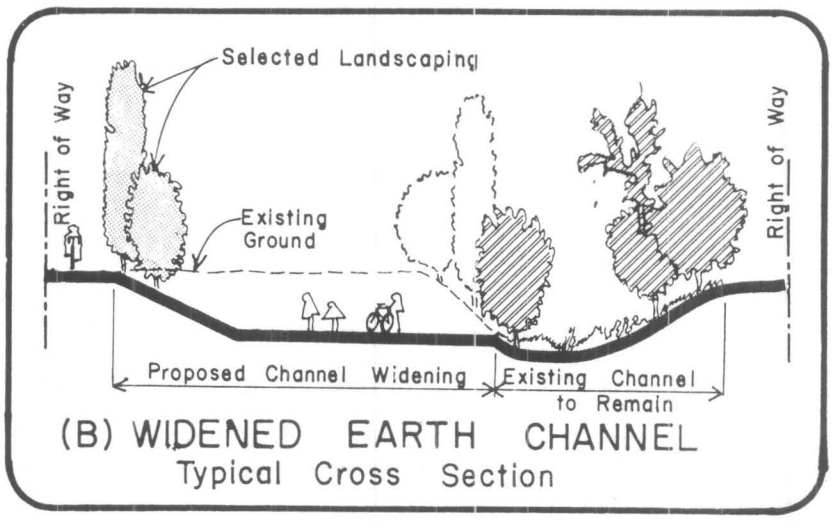
EQ Plan: Alternative A, the earth channel bypass. (This alternative least disturbs the natural chanel and provides additional open space.)

CAC Recommendation: Either alternative A, the earth channel bypass, or B, the widened earth channel. (Residents along Minnesota Avenue strongly support A, the bypass alternative.)

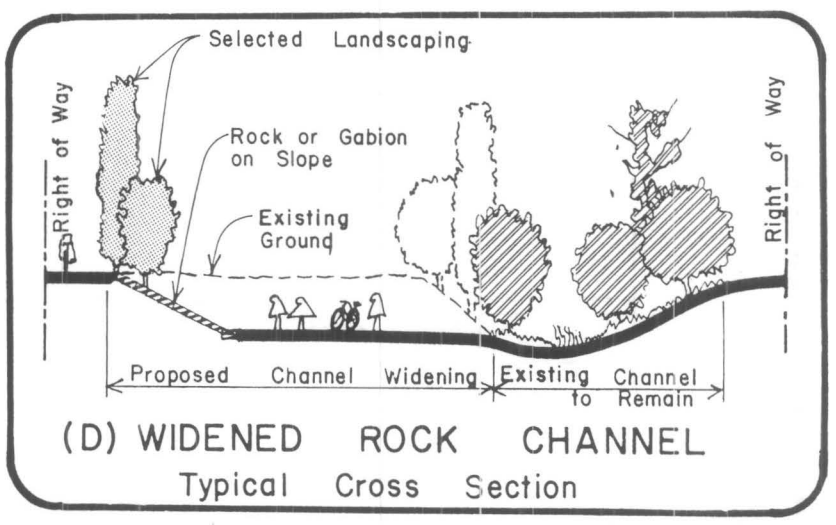
Your Preference: _____

# REACH VIII




(B) WIDENED EARTH CHANNEL
Typical Cross Section




(D) WIDENED ROCK CHANNEL
Typical Cross Section

## DESCRIPTION

Reach VIII is a very short reach through the Willow Glen area. The boundaries of the reach are the Western Pacific Railroad bridge on the north and Willow Glen Way on the south. The short stretch of river was treated as a separate reach (rather than combining it with Reach IX) primarily because of hydraulic considerations. The channel in Reach VIII is quite narrow with limited capacity. Upstream of Willow Glen Way the existing channel is capable of carrying much higher flows.

While the reach is short, it is very significant both for its wildlife habitat and its beauty. The vegetation along the channel is very thick and provides good food and cover for birds and other wildlife. The river channel is not very accessible to the general public in this reach as private residences back up to the river along both east and west banks. Many of these residences have been nicely landscaped to take advantage of the beauty of the tree-lined channel.

## ADJACENT LAND USE -- PRESENT AND PROPOSED

The land use along this reach is residential, consisting entirely of single-family homes. The homes along the west bank are slightly more expensive than those on the east. In general, the homes are well maintained and nicely landscaped.

Future land use adjacent to the river in this reach is not expected to change in the foreseeable future. Plans for the proposed Guadalupe Freeway show it running about 1000 feet east of the river through this area (off the map to the rignt). Construction of the Freeway will require relocations of many private homes in that area, but none in the vicinity of the river in this reach.

## ALTERNATIVES CONSIDERED

The two channel bypass alternatives did not receive serious consideration in this reach because of the adjacent land use. The cost of acquiring the necessary R/W in this residential area makes them impractical economically. Moreover, the social impacts of the additional relocations that would be required by either bypass alternative make them undesirable. In this reach we finally get to a point where floodwalls are <u>almost</u> practical. It might be possible to contain the 100-year flood with floodwalls in the uppermost (southern) part of this reach. However, in the downstream portion the walls would need to be at least six feet high. Therefore, this alternative did not receive further consideration for this reach.

(B) <u>Widened Earth Channel</u>: Channel widening would be from the east bank along this reach, leaving the west bank in its natural state. The major environmental impact of this alternative is the destruction of the valuable riparian vegetation along the east bank. However, the cleared area would be landscaped and the channel would revegetate over time. This alternative would require the removal of 21 homes along Mackey Drive. These relocations must be considered a serious impact.

(D) <u>Widened Rock Channel</u>: With this alternative, channel widening would also be from the east bank, leaving the west bank intact. The purpose of rock lining is to decrease the required R/W. (A lined channel allows you to have higher flow velocities without erosion problems. With faster flow rates you can carry more water in a narrower chanel.) Unfortunately, in this reach a slightly smaller R/W does not gain anything. The removal of 21 homes would still be required. This is because of "severance" problems. (Basically, you can't take only half a house.) Thus, the social impacts are not any less and the impacts to the natural environment are worse. A rock-lined channel would appear less natural and would not allow for the growth of future wildlife habitat.

MAJOR IMPACTS OF CHANNEL ALTERNATIVES
REACH VIII

| CHANNEL ALTERNATIVE | R/W* WIDTH IN FEET | RELOCATIONS HOMES | RELOCATIONS COMMERCIAL/ INDUSTRIAL | CLEARING REQUIRED CHANNEL | CLEARING REQUIRED OTHER | COSTS ($ MILLIONS) R/W** | COSTS ($ MILLIONS) CONSTRUCTION | COSTS ($ MILLIONS) TOTAL |
|---|---|---|---|---|---|---|---|---|
| (A) Earth Channel Bypass | Alternative not studied in detail. | | | Economically not practical. | | | | |
| (B) Widened Earth Channel (East Bank) | 150 | 21 | 0 | 1 Ac | 4 Ac | 1.2 | 0.6 | 1.8 |
| (C) Covered Channel Bypass | Alternative not studied in detail. | | | Economically not practical. | | | | |
| (D) Widened Rock Channel (East Bank) | 120 | 21 | 0 | 1 Ac | 3 Ac | 1.0 | 0.7 | 1.7 |
| (G) Floodwalls | Alternative not studied in detail. | | | Technically not practical. | | | | |
| (H) Floodwalls with Selective Clearing | Alternative not studied in detail. | | | Technically not practical. | | | | |

* R/W width excludes existing channel width which averages 110 feet.
** R/W costs include estimated lands and relocations cost.

## PREFERRED ALTERNATIVES

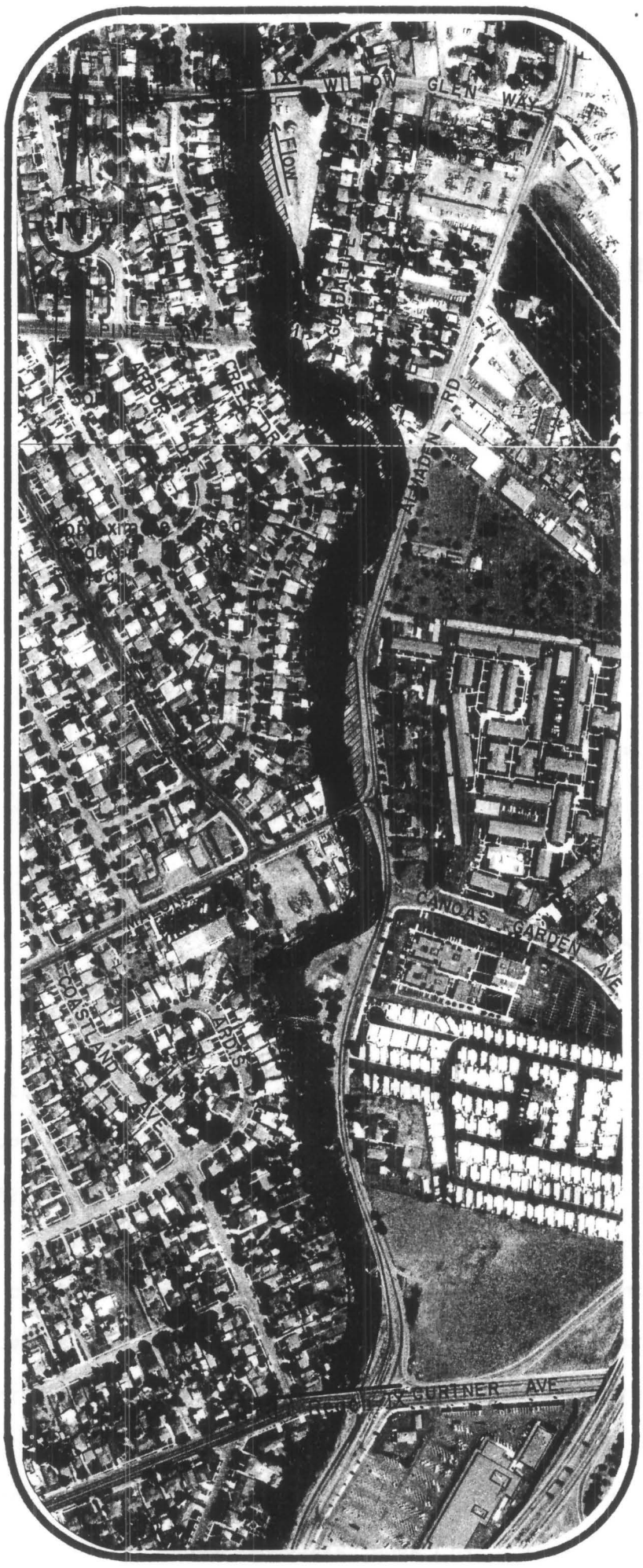
<u>NED Plan</u>: Alternative D, the widened rock channel. (This is the least costly alternative because of the lower right of way costs.)

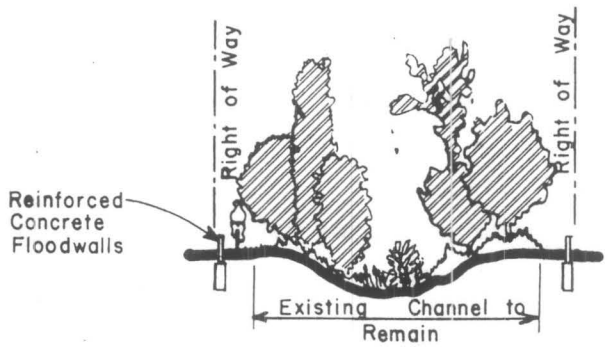
<u>EQ Plan</u>: Alternative B, the widened earth channel. (Both alternatives B and D take the same number of homes, but D provides less potential for future riparian habitat.)

<u>CAC Recommendation</u>: Alternative B, the widened earth channel. (This also seemed to be the preferred alternative at the neighborhood workshop for this area.)

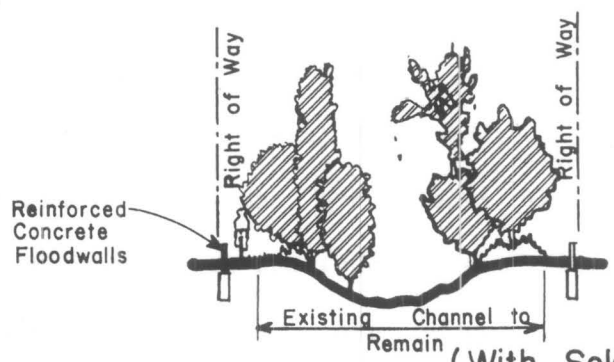
<u>Your Preference</u>: _____

# REACH IX




(G) FLOOD WALLS
Typical Cross Section




(H) FLOOD WALLS (With Selective Clearing)
Typical Cross Section

## DESCRIPTION

Reach IX, the final reach in the study area, runs from Willow Glen Way upstream to the study boundary at Curtner Avenue. Almaden Road runs along the east bank of the river through most of this reach. On the opposite side, Creek Drive parallels the river in the northern half of the reach. Malone Road is the only bridge crossing the river in this area.

The wildlife habitat along the channel begins to decrease in value very slightly in this reach. The variety of plant species decreases while the abundance of those species associated with warmer and dryer habitats increases. The channel is still very pleasing to the eye, however. Many large trees line the banks and there are a number of deep quiet pools in the river.

## ADJACENT LAND USE -- PRESENT AND PROPOSED

The land use along the west side of river is primarily residential with single-family homes lining the bank through most of the reach. On the east side, the land use is quite different. There are

some single-family residences along Guadalupe Avenue in the downstream section of the reach. Apartment complexes, mobile homes, and some commercial development are located off Almaden Road along the remainder of the east side.

Future land use is not expected to change along the west side of the river. Along the east side it is likely that the presently vacant land will be developed for commercial or multi-family residential uses.

## ALTERNATIVES CONSIDERED

In this reach you finally get to use the last two "building blocks". Flood walls are practical in this reach from both an economic and engineering standpoint. The existing channel has good capacity throughout the reach so that it is possible to contain the 100-year flood flows by simply adding short concrete walls along both banks. Because they result in much less impact than the other alternatives, the two flood wall alternatives were the only ones given serious consideration during this stage of planning.

(G) Flood Walls Alone: Three-foot-high reinforced concrete walls would be constructed along both sides of the channel from Curtner Avenue to Willow Glen Way. These flood walls would be set back 5 to 10 feet from the top of the bank. The existing channel would remain in its natural state. This alternative has very little impact on the natural environment. However, some homeowners along the west bank may view the flood wall as an intrusion into their backyards.

(H) Flood Walls with Selective Clearing: With this alternative, flood walls would still be required along both banks in most areas. However, some of the brush and shrubs would be cleared along the channel banks. This clearing would slightly improve the flow capacity of the existing channel. By increasing the capacity of the channel, it is possible to use lower flood walls. (The extent to which flood wall heights could be reduced will be examined in more detail in the next stage of planning.) This alternative has a slightly greater impact on the environment in that some natural channel vegetation would be removed.

MAJOR IMPACTS OF CHANNEL ALTERNATIVES
REACH IX

| CHANNEL ALTERNATIVE | R/W* WIDTH IN FEET | RELOCATIONS HOMES | RELOCATIONS COMMERCIAL/ INDUSTRIAL | CLEARING REQUIRED CHANNEL | CLEARING REQUIRED OTHER | COSTS ($ MILLIONS) R/W** | CONSTRUCTION | TOTAL |
|---|---|---|---|---|---|---|---|---|
| (A) Earth Channel Bypass | Alternative not studied in detail. | | | Economically not practical. | | | | |
| (B) Widened Earth Channel | Alternative not studied in detail. | | | Economically not practical. | | | | |
| (C) Covered Channel Bypass | Alternative not studied in detail. | | | Economically not practical. | | | | |
| (D) Widened Rock Channel | Alternative not studied in detail. | | | Economically not practical. | | | | |
| (G) Floodwalls | 20 | 0 | 0 | 2 Ac | None | 0.2 | 0.4 | 0.6 |
| (H) Floodwalls with Selective Clearing | 20 | 0 | 0 | 6 Ac | None | 0.2 | 0.4 | 0.6 |

* R/W width excludes existing channel width which averages 110 feet.
** R/W costs include estimated lands and relocations cost.

## PREFERRED ALTERNATIVES

The two flood wall alternatives were not examined in sufficient detail during this stage of planning to allow anyone to make a choice between the two. However, either of the flood wall alternatives is definitely preferred over all the other channel modification alternatives for this reach. This is because the impacts of flood walls are very minor compared to the other alternatives. Thus, the NED Plan, the EQ Plan, and the CAC Recommendation all call for flood walls in this reach. It is possible, however, that you might prefer something else.

Your Preference: _____

## PUTTING IT ALL TOGETHER: A PLAN FOR THE GUADALUPE

The table below summarizes the reach-by-reach discussions contained in the previous 16 pages. Each column in the table represents a different proposed plan for the Guadalupe. The alternatives listed for each of the nine channel reaches in a given column are the alternatives which best satisfy the objectives of that particular plan. Thus, the NED Plan shows the least costly alternatives for each of the nine reaches. The EQ Plan shows which alternative channel section would best protect or enhance environmental quality in each reach. The next column shows the recommendations of the Citizens Advisory Committee (CAC) for each reach.

The CAC recommendations represent the best reflection of the community's preferences at this time. In arriving at their recommendations the CAC carefully weighed the preferences expressed by persons at the neighborhood workshops and preferences expressed by other interested persons. The CAC recommendations also reflect the views of the City of San Jose staff.

The CAC recommendations represent the culmination of a long and intensive public involvement effort on this planning study. That is not to say, however, that there is no room for additional input from the public. The Corps is interested in what <u>you</u> prefer for the Guadalupe. The final column of the table below has been provided for you to fill in. By writing in the alternative that you prefer for each of the nine reaches, you will have arrived at <u>your preferred plan for the Guadalupe</u>.

We are asking that you also fill in your preferences on the questionnaire on page 41 and send it to the Corps. Your preferences, if received in the Corps' office by September 10th, will be included in the presentation at the public meeting. It is quite possible that the final plan recommended by the Corps will be some combination not shown in the table below. Perhaps it will be your recommended plan.

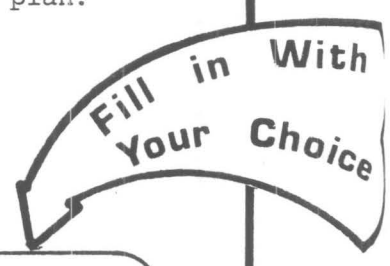



TABLE 5. POSSIBLE ALTERNATIVE PLANS FOR THE GUADALUPE RIVER

| REACH | NO FEDERAL PROJECT | NED PLAN | EQ PLAN | CAC RECOMMENDATIONS | YOUR PLAN |
|---|---|---|---|---|---|
| I Highway 17 to Coleman Avenue | NO FEDERALLY FUNDED CONSTRUCTION | B Widened Earth Channel | A Earth Channel Bypass | A or B | |
| II Coleman Avenue to St. John Street | | D Widened Rock Channel | B Widened Earth Channel | B Widened Earth Channel | |
| III & IV St. John Street to Park Avenue | | B Widened Earth Channel | C Covered Channel Bypass | B Widened Earth Channel | |
| V Park Avenue to Interstate 280 | | B Widened Earth Channel | C Covered Channel Bypass | C Covered Channel Bypass | |
| VI Interstate 280 to S.P.R.R. | | D Widened Rock Channel | B Widened Earth Channel | B Widened Earth Channel | |
| VII S.P.R.R. to W.P.R.R. | | B Widened Earth Channel | A Earth Channel Bypass | A or B | |
| VIII W.P.R.R. to Willow Glen Way | | D Widened Rock Channel | B Widened Earth Channel | B Widened Earth Channel | |
| IX Willow Glen Way to Curtner Avenue | | G or H Floodwalls | G or H Floodwalls | G or H Floodwalls | |
| TOTAL COST | | $32,000,000 | $39,000,000 | $34,000,000 or $39,000,000 | |
| B/C Ratio | | 1.8 | 1.4 | 1.7 or 1.4 | |

# THE CORPS WANTS YOUR INPUT

## THE ENCLOSED QUESTIONNAIRE

A short questionnaire has been included as the last page of this brochure. The main part of this questionnaire is similar to Table 3 where you can again write in your preferred alternative for each reach. A question has also been included to get your ideas and opinions regarding proposed recreation plans for the Guadalupe. There is ample room for any additional comments, suggestions, or questions you might have as well.

Please fill in as much or as little of the questionnaire as you like. If you are concerned about only that reach of the river running through your neighborhood, fill in only your preferred alternative for that reach. That information is just as important to the Corps as is a completed plan for the whole river. However much you fill in, please return the questionnaire to the Corps as soon as possible. Cut the questionnaire out, fold as indicated, and drop it in the mail. Postage will be paid by the Corps.

## PUBLIC MEETING -- FRIDAY, SEPTEMBER 17, 1976

A public meeting will be held to discuss proposed plans for the Guadalupe at 7:30 p.m., Friday, September 17th. This meeting will be held in the Santa Clara County Board of Supervisors' Chambers at 70 West Hedding Street in San Jose.

The Corps sincerely invites you to attend this meeting. The alternative plans described in this brochure will be discussed at this time. The Corps will also be interested in hearing about any other alternatives that you feel might be feasible. Corps planners at the meeting will be happy to answer any questions you might have about the plans and background material contained in this brochure. (You may find it helpful to bring this brochure with you to the meeting.)

If you won't be able to attend the meeting, please fill out the questionnaire and mail it to the Corps as soon as possible. Your preferences, comments, and questions can be discussed at the public meeting if your questionnaire is received in our offices by September 10th.

## WHO TO CONTACT FOR MORE INFORMATION

If you have any questions about this study after reading this brochure, please feel free to write or call the Corps. Correspondence should be addressed to:

Guadalupe River Study Manager
Corps of Engineers, San Francisco District
211 Main Street
San Francisco, CA 94105

Or phone (415) 556-5908 and ask for the Guadalupe River Study Manager.

# WHERE DO WE GO FROM HERE?

Your input, whether received via the questionnaire or at the September 17th public meeting, will receive careful consideration by the Corps. Your opinions, your suggestions, your likes, and your dislikes will all be considered in deciding which alternatives, if any, should receive further consideration in the next stage of planning.

The next stage of the planning process will examine these few alternative plans in greater detail. A more detailed recreation plan will also be drawn up in cooperation with the City of San Jose Parks Department. The environmental impacts of each alternative plan still under consideration will be more fully examined and a draft Environmental Impact Statement (EIS) prepared. This draft EIS will be circulated for review and comment prior to the final public meeting. At this final public meeting the District Engineer will describe the plan which the Corps will recommend to Congress. If everything goes smoothly, construction could begin on a flood protection project on the Guadalupe in the mid-1980's.

# GLOSSARY OF TERMS AND ABBREVIATIONS USED IN THIS BROCHURE

acre-feet: A measure of a volume of water. One acre of land covered with water to a depth of one foot contains 1 acre-foot of water. 1 acre-foot of water contains about 326,000 gallons.

B/C Ratio: The ratio of estimated project benefits divided by estimated project costs. For Federal water resources projects this ratio must be greater than one. That is, the benefits must be greater than the costs. (See page 18).

cfs: Cubic feet per second. A measure of the amount of water flowing down a channel (or trying to). A flow of one cfs is equal to the discharge from a stream one foot wide and one foot deep flowing at an average velocity of one foot per second. One cfs is approximately equal to a flow rate of 450 gallons per minute.

CAC: Citizens Advisory Committee. The committee formed to involve interested people from the community in this planning study. The CAC has been meeting nearly every month since mid-1972. (See page 13.)

design flow: The amount of water which could be expected as a result of the 100-year flood. (See page 6.)

EQ Plan: The Environmental Quality Plan. One of the alternative plans which the Corps is now required to formulate in planning studies such as this. The EQ Plan is the alternative which best protects and enhances the environment. (See page 19.)

floodplain: The land adjacent to a river or stream channel that is subject to flooding when flows exceed the capacity of the well-defined low-flow channel.

gabion: A wire basket which is filled with rocks and used to line channels. The wire helps to hold the rocks in place, but is nearly invisible itself. An example of a gabion-lined channel can be seen where the Almaden Expressway crosses the Guadalupe River just upstream of the study boundary.

NED Plan: The National Economic Development Plan. One of the alternative plans which the Corps is now required to formulate in planning studies such as this. The NED Plan is that alternative which provides the maximum net economic benefits. (See page 19.)

100-year flood: The flood which has, on the average, a one percent chance of being equalled or exceeded in any given year. It does not mean a flood which occurs only once every hundred years. The channel alternatives described in this brochure are all designed to safely carry flows as large as the 100-year flood. (See page 6.)

reach: One continuous stretch or section of a river or stream. In this study the river has been divided into nine separate reaches for the purpose of preparing alternative plans.

riparian: Living or located on the banks of a natural river or stream. Riparian vegetation is vegetation associated with streams and includes plants growing along the channel from the edge of the water up to the top of the bank and along the top of the bank.

watershed: The area drained by a river and its tributaries. The boundary of a watershed is located along the highest elevations separating adjacent watersheds -- along the ridge tops in the higher elevations. If you were to stand along the boundary of the Guadalupe River watershed shown in Figure 3 and drop a bucket of water, theoretically some of the water would find its way into the Guadalupe River and some would flow in the opposite direction into the neighboring watershed.

# QUESTIONNAIRE

The Corps wants to know what you think about the alternative plans being considered for this stretch of the Guadalupe River. This questionnaire has been provided to give you an easy way of making your views and concerns known.

## YOUR PLAN FOR THE GUADALUPE

Spaces have been provided in the table below for you to indicate which alternative channel treatment you prefer for each reach. (You will probably want to refer to Table 3 on page 38. If you completed that table all you have to do is copy your preferred plan into the spaces below.) Space has also been provided below for comments and suggestions regarding additional alternatives which should be looked at, environmental impacts which were not discussed, etc. NOTE: Do not feel obligated to fill in something for each reach. If your concern is only with the river near your home, fill in only that reach.

| REACH | YOUR PREFERRED ALTERNATIVE | ADDITIONAL ALTERNATIVES, IMPACTS, OTHER COMMENTS |
|---|---|---|
| I<br>Highway 17 to<br>Coleman Avenue | | |
| II<br>Coleman Avenue to<br>St. John Street | | |
| III & IV<br>St. John Street<br>to Park Avenue | | |
| V<br>Park Avenue to<br>Interstate 280 | | |
| VI<br>Interstate 280 to<br>Southern Pacific RR | | |
| VII<br>Southern Pacific RR<br>to Western Pacific RR | | |
| VIII<br>Western Pacific RR<br>To Willow Glen Way | | |
| IX<br>Willow Glen Way to<br>Curtner Avenue | | |

NO PROJECT: Check here if your preference is for no flood protection project on the river. _____

## YOUR INTERESTS AND CONCERNS

Below we have listed some factors which will be considered in developing alternative plans for the Guadalupe River as planning continues. Please indicate in the table below how important each of these factors is to you. Also indicate those factors about which you'd like to have more information.

| | VERY IMPORTANT | MODERATELY IMPORTANT | SLIGHTLY IMPORTANT | NEED MORE INFORMATION |
|---|---|---|---|---|
| Flood Protection | | | | |
| Preservation of the natural channel | | | | |
| Development of recreation potential | | | | |
| Relocations of homes and businesses | | | | |
| Loss of privacy for homeowners along the river | | | | |
| Cost of a Federal project | | | | |
| Other (please specify your concerns): | | | | |

Do you live within the area which would be flooded by the 100-year flood? (Refer to Figure 3 on page 7.) _____ Yes _____ No _____Can't tell for sure.

Do you live on or own property along the river bank or within one block of the river? _____Yes ____No
If YES, along which reach do you live? Reach _____.

## RECREATION PLAN

If the river is developed as a linear park, what sorts of activities would you like to see included in the park? (e.g., bicycling, hiking, picnicing, boating, etc.). _____

_____

_____

Are there any activities which you would specifically like to see excluded?_____

_____

THE BROCHURE

The Corps is continually trying to improve its techniques for involving the public in its planning efforts. Any suggestions you have regarding this brochure will help us to improve our future brochures. Any comments on length? ....readability? ....maps and figures? ....information which could have been left out? ....or information which you found missing? _____

_____

_____

ADDITIONAL COMMENTS

Any additional suggestions, ideas, opinions, etc., on the Guadalupe River in general; on proposed plans discussed in this brochure; or on the way this study has been conducted??? _____

_____

_____

## INSTRUCTIONS FOR RETURNING THIS QUESTIONNAIRE

Cut and fold this sheet as indicated. Then staple or tape the ends, making sure the Corps' address is on the outside, and drop it in the mail. No postage is necessary. The questionnaire must be in our office by September 10th for your responses to be included in the public meeting presentation.

FOLD HERE FIRST

FOLD HERE FIRST

DEPARTMENT OF THE ARMY
U. S. ARMY ENGINEER DISTRICT, SAN FRANCISCO
CORPS OF ENGINEERS
211 MAIN STREET
SAN FRANCISCO, CALIFORNIA 94105

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, $300

POSTAGE AND FEES PAID
DEPARTMENT OF THE ARMY
DOD-314

U.S.MAIL

Guadalupe River Study Manager
Corps of Engineers
San Francisco District
211 Main Street
San Francisco, California 94105

CUT ALONG LINE

FOLD HERE SECOND

FOLD HERE SECOND

If you would like to be kept informed of progress on this planning study, please write in your name and address in the space below.

_____

_____

_____

_____

THANK YOU VERY MUCH for taking the time to read through this brochure and complete and return this questionnaire. The Corps appreciates the interest you have shown in this study.